

Access DB# 28495  
P

**SEARCH REQUEST FORM**  
Scientific and Technical Information Center

Requester's Full Name: \_\_\_\_\_ Examiner #: \_\_\_\_\_ Date: \_\_\_\_\_  
Art Unit: \_\_\_\_\_ Phone Number 301 \_\_\_\_\_ Serial Number: \_\_\_\_\_  
Mail Box and Bldg/Room Location: \_\_\_\_\_ Results Format Preferred (circle): PAPER DISK E-MAIL

**If more than one search is submitted, please prioritize searches in order of need.**

\*\*\*\*\*  
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

*\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

\*\*\*\*\*  
**STAFF USE ONLY**

Searcher: Sheppard  
Searcher Phone #: 308-4499  
Searcher Location: \_\_\_\_\_  
Date Searcher Picked Up: \_\_\_\_\_  
Date Completed: 5/19/00  
Searcher Prep & Review Time: \_\_\_\_\_  
Clerical Prep Time: \_\_\_\_\_  
Online Time: \_\_\_\_\_

**Type of Search**

NA Sequence (#) \_\_\_\_\_  
AA Sequence (#) \_\_\_\_\_  
Structure (#) \_\_\_\_\_  
Bibliographic \_\_\_\_\_  
Litigation \_\_\_\_\_  
Fulltext \_\_\_\_\_  
Patent Family \_\_\_\_\_  
Other \_\_\_\_\_

**Vendors and cost where applicable**

STN: \_\_\_\_\_  
Dialog \_\_\_\_\_  
Questel/Orbit \_\_\_\_\_  
Dr.Link \_\_\_\_\_  
Lexis/Nexis \_\_\_\_\_  
Sequence Systems \_\_\_\_\_  
WWW/Internet \_\_\_\_\_  
Other (specify) \_\_\_\_\_

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28495

STIC-Biotech/ChemLib

From: Saoud, Christine  
Sent: Monday, May 08, 2000 8:47 AM  
To: STIC-Biotech/ChemLib  
Subject: sequence search  
Importance: High

09/214,982

Please search SEQ ID NO:1 and 2 in the patent and commercial databases.

Thank you,  
Christine Saoud  
A.U. 1646  
CM1 - 10E03  
305-7519

**This Page Blank (uspto)**

GenCore version 4.5  
Copyright (c) 1993 - 2000 Compugen Ltd.

OM nucleic - nucleic search, using sw model

Run on: May 16, 2000, 11:41:21 ; Search time 682.87 Seconds  
(without alignments)  
11894.884 Million cell updates/sec

Title: US-09-214-982-2  
Perfect score: 2004  
Sequence: 1 ccagttctgtarctgtaa.....aaacaccattattcaagtct 2004

Scoring table: IDENTITY\_NUC  
Gapop 10.0 , Gapext 1.0

Searched: 4857316 seqs, 2026611650 residues

Total number of hits satisfying chosen parameters: 9714632

Minimum DB seq length: 0  
Maximum DB seq length: 1000000

Post-processing: Minimum Match 0%  
Listing first 45 summaries

Database :

- EST:\*
- 1: em\_est1:\*
  - 2: em\_est2:\*
  - 3: em\_est3:\*
  - 4: em\_est4:\*
  - 5: em\_est5:\*
  - 6: em\_est6:\*
  - 7: em\_est7:\*
  - 8: em\_est8:\*
  - 9: em\_est9:\*
  - 10: em\_est10:\*
  - 11: em\_est11:\*
  - 12: em\_est12:\*
  - 13: em\_est13:\*
  - 14: em\_est14:\*
  - 15: em\_est15:\*
  - 16: em\_est16:\*
  - 17: em\_est17:\*
  - 18: em\_est18:\*
  - 19: em\_est19:\*
  - 20: gb\_est1:\*
  - 21: gb\_est2:\*
  - 22: gb\_est3:\*
  - 23: gb\_est4:\*
  - 24: gb\_est5:\*
  - 25: gb\_est6:\*
  - 26: gb\_est7:\*
  - 27: gb\_est8:\*
  - 28: gb\_est9:\*
  - 29: gb\_est10:\*
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  - 44: gb\_est25:\*

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- 51: gb\_est32:\*
- 52: em\_est20:\*
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- 54: em\_est22:\*
- 55: em\_est23:\*
- 56: em\_est24:\*
- 57: em\_est25:\*
- 58: em\_est26:\*
- 59: gb\_est33:\*
- 60: gb\_est34:\*
- 61: gb\_est35:\*
- 62: gb\_est36:\*
- 63: gb\_est37:\*
- 64: gb\_est38:\*
- 65: em\_est27:\*
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- 67: em\_est29:\*
- 68: em\_est30:\*
- 69: gb\_est39:\*
- 70: gb\_est40:\*
- 71: gb\_est41:\*
- 72: gb\_est42:\*
- 73: gb\_est43:\*
- 74: gb\_est44:\*
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- 79: gb\_est45:\*
- 80: gb\_est46:\*
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- 88: em\_gss3:\*
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- 105: gb\_gss12:\*
- 106: gb\_gss13:\*
- 107: gb\_gss14:\*
- 108: gb\_gss15:\*
- 109: gb\_gss16:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result % Query

IMAGE Consortium ([info@image.llnl.gov](mailto:info@image.llnl.gov)) for further information.  
 Insert Length: 964 Std Error: 0.00  
 Seq primer: -40ml3 fwd. ET from Amersham  
 Label quality sequence stop: 428.

[illegible]

ORGANISM Homo sapiens  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
Eutheria; Primates; Catarrhini; Hominidae; Homo.  
1 (bases 1 to 531)  
REFERENCE Adams,M.D., Kelley,J.M., Rounsley,S.R. and Venter,J.C.  
AUTHORS Use of a BAC End Sequence Database for Sequence-Ready Map Building  
TITLE Unpublished (1997)  
JOURNAL  
COMMENT Contact: Mark Adams  
Department of Eukaryotic Genomics  
The Institute for Genomic Research  
9712 Medical Center Dr., Rockville, MD 20850, USA  
Tel: 301 838 0200  
Fax: 301 838 0208  
Email: mdadams@tigr.org  
Clones are available from Research Genetics (info@resgen.com). BAC  
end search page:  
http://www.tigr.org/tldb/humgen/bac\_end\_search/bac\_end\_search.html  
Seq primer: T7  
Class: BAC ends.

FEATURES  
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/clone="A-345M17"  
/clone\_lib="CIT978SKA1"  
/sex="Female"  
/cell\_type="Fibroblast"  
/note="Vector: pBAC108L; Site\_1: HindIII; Site\_2: HindIII;  
Caltech Human BAC Library A1"  
BASE COUNT 145 a 95 c 110 g 179 t 2 others  
ORIGIN

Query Match 21.28; Score 425.6; DB 84; Length 531;  
Best Local Similarity 96.18; Pred. No. 4e-103;  
Matches 465; Conservative 2; Mismatches 13; Indels 4; Gaps 3;  
Qy 1 ccagcttctgtarctgaagcattggtggccacacacccctccttacaagcaactag-a 59  
Db 51 CCAGCTTCTGTACTGTGAACATTGTGTGGCCACACCCCTCTTACAAAGCACTAGAA 110  
Qy 60 acctgcgcacacattggagagattttttaatttcttgacagaaagtaatttagt 119  
Db 111 ACCTGCGCATACATTGGAGAGATTTTAAATTTCTGGACATGAAGTAA-ATTAGT 169  
Qy 120 gcttctyaatttcaggtagaagacatgtccacacctctgattatttttggagaacatttg 179  
Db 170 GCTTCTTAATTTCAGTAGAAGACATGTCCACCTCTGATTATGTGTGGAGAACATGTTG 229  
Qy 180 attttttcatctctctcccccaccctaagattgtgcaaaaaagcgtacctgcta 239  
Db 230 ATTTTTCATCTCTCTCCACCCTTAAGATGTGCAAAAAGCGTACCTTGCTTA 289  
Qy 240 attgaataatttcattggattttgatcagaactgacattgtttcttctgtggaagt 299  
Db 290 ATTCGAATAATTTCATGGATTTTGATCAGAACTGATATTGTGTTCTGTGGAATC 349  
Qy 300 ttgaggtttcaaaacttctctcttggaagtccttttgaaacaatttctctagctgct 359  
Db 350 TTGAGGTTTCAAACTTCTCTCTGGAGAAATGC--TTTTGANAATAATTTCTAGCTGCT 407  
Qy 360 gatgtcaactgcttagtaataacagtggaattattgaaataattcaaaatgacagagatgggt 419  
Db 408 GATGTCAACTGCTTAGTAATACAGTGGATATTGAAATATTCAAAATGTACAGAGAGTGGGT 467  
Qy 420 agtggtgaatttttcatgatgtgtgtacgtccagctggtgagggctccagtaataga 479  
Db 468 ACTGGTGAATGTTTCATGATGTTGTACGTTCACTGGTGCAGGGCTCCANTATGAACA 527  
Qy 480 tggga 483  
Db 528 TGGGA 531

RESULT 3  
AA995128/c 425 bp mRNA EST 27-AUG-1998  
LOCUS ou22807.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapiens cDNA clone  
DEFINITION IMAGE:1626996 3', mRNA sequence.  
AA995128  
ACCESSION AA995128.1 GI:3181617  
KEYWORDS EST.  
SOURCE human.  
ORGANISM Homo sapiens  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
Eutheria; Primates; Catarrhini; Hominidae; Homo.  
1 (bases 1 to 425)  
REFERENCE NCI-CCAP http://www.ncbi.nlm.nih.gov/ncicgap.  
AUTHORS National Cancer Institute, Cancer Genome Anatomy Project (CGAP),  
TITLE Tumor Gene Index  
JOURNAL Unpublished (1997)  
COMMENT On May 5, 1995 this sequence version replaced gi:797630.  
Contact: Robert Strausberg, Ph.D.  
Tel: (301) 496-1550  
Email: Robert.Strausberg@nih.gov  
This clone is available royalty-free through LLNL; contact the  
IMAGE Consortium (info@image.llnl.gov) for further information.  
Insert Length: 1376 Std Error: 0.00  
Seq primer: -40ml3 fwd. ET from Amersham  
High quality sequence stop: 413.  
Location/Qualifiers  
1..425  
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/db\_xref="taxon:9606"  
/clone="IMAGE:1626996"  
/clone\_lib="Soares\_NFL\_T\_GBC\_S1"  
/lab\_host="DH10B"  
/note="Organ: pooled; Vector: pT7T3D-Pac (Pharmacia) with  
a modified polylinker; Site\_1: Not I; Site\_2: Eco RI;  
Equal amounts of plasmid DNA from three normalized  
libraries (fetal lung NbHL19W, testis NHT, and B-cell  
NCI-CCAP\_GCB1) were mixed, and ss circles were made in  
vitro. Following HAP purification, this DNA was used as  
tracer in a subtractive hybridization reaction. The driver  
was PCR-amplified cDNAs from pools of 5,000 clones made  
from the same 3 libraries. The pools consisted of  
I.M.A.G.E. clones 297480-302087, 682632-687239,  
726408-728711, and 729096-731399. Subtraction by Bento  
Soares and M. Fatima Bonaldo.  
BASE COUNT 144 a 87 c 77 g 117 t  
ORIGIN

Query Match 20.78; Score 415.4; DB 40; Length 425;  
Best Local Similarity 99.88; Pred. No. 2e-100;  
Matches 416; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
Qy 1588 aatccagaccaacctccattccaccagctaaagagtccttgattcattgatgatgc 1647  
Db 425 AATCCAGCAACCAACCTTCATTTCACCAGCTAAGAGTCCCTGTTTCATTTCATGGATGC 366  
Qy 1648 ttctagctgcagatgcctctgcgcaccaagaatggagagagggaccatgtaactct 1707  
Db 365 TTCTAGCTGCAGATGCCTCTGCGCACCAAGGAATGGAGAGGGGACCCATGTAATCCT 306  
Qy 1708 ttgttttagttttgtttttgtttttgttgatgagaagagtgctgctggtggaatgg 1767  
Db 305 TTTGTTTAGTTTCTTTTGTGTTTGTGTAATGAGAAGGTGCTGCTCATGGAATGG 246  
Qy 1768 cagtgctcatgactgattactcagacagatgaggaactagtctctgactcctt 1827  
Db 245 CAGGTGCATATGACTGATTACTCAGAGCAGATGAGGAAAACCTAGTCTCTGAGTCTCT 186  
Qy 1828 tgcataatcgcaactcttggaattattctgattcttttttatgcagaatttgattcgtat 1887  
Db 185 TGCTAATCGCAACTCTGTGTAATTATCTGATTCTTTTATGAGAAATTGATTCTGAT 126





BASE COUNT		137 a	84 c	63 g	97 t	source	
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						/db_xref="GDB:483776"	
						/db_xref="taxon:9606"	
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						/sex="male"	
						/dev_stage="72 years"	
						/lab_host="SOLR cells (kanamycin resistant)"	
						/note="Organ: lung; Vector: pBluescript SK-; Site_1: EcoRI; Site_2: XhoI; Cloned unidirectionally. Primer: Oligo dr. normal lung. Average insert size: 1.0 kb; Uni-GAP XR Vector; -5' adaptor sequence: 5' GAATTCGGCAGAG 3' -3' adaptor sequence: 5' CTCGAGTTTGTGTTTTTTTTTTT 3'"	
BASE COUNT		140 a	91 c	101 g	126 t	3 others	
ORIGIN							
						Query Match	
						Best Local Similarity	
						Matches	
						Score	
						Pred. No.	
						Indels	
						Gaps	
						Length	
						461;	
						31;	
						4;	
						461;	
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						395	
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						335	
						1729	
						275	
						1789	
						215	
						1849	
						156	
						1909	
						96	
						1969	
						36	
						2003	
						2	
RESULT						7	
AL572543/c							
LOCUS							
DEFINITION							
						EST	
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QY	1000	tactcaattatcagaagatccatccagatccctcgaagaagatcgcgtgtcccatcccaag	1059
DB	343	TACTCAATTATCAGAAGATCCATTAGACCCAGAGAAGATGAATGCTCTCATTTCCAAG	284
QY	1060	aaactctgtcctattgacatgctctcgtggtatgacacaagaatgataatggtgttttcaggag	1119
DB	283	AAATCTCTGCCGATTGACATGCTGTGGGATAACACCCAATGTAATATGTTTGTGCAAAAC	224
QY	1120	gaaatacacttgtctgaaacagaagaccactctcatctccaggaaaccagctctctctgtggg	1179
DB	223	GAGACTCTCTGCTCTGGGACAGAGACCACCTCTTACTCTCCAGGACCACACTCTCTGTGGA	164



(Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of a modified pT73 vector (Pharmacia). Library went through one round of normalization to a Cot = 20. Library constructed by Bento Soares and M.Fatima Bonaldo."

BASE COUNT 127 a 85 c 89 g 109 t 13 others  
ORIGIN  
  
Query Match 13.1%; Score 262.8; DB 23; Length 423;  
Best Local Similarity 94.1%; Pred. No. 1.3e-59;  
Matches 301; Conservative 0; Mismatches 15; Indels 4; Gaps 3;  
  
QY 1673 ccaaggaatggagaggggaccc-attgaatcctttgtttgtttgtttgttt 1730  
Db 337 CCAAGGAATGGAGAGGGGACCCCATGAAACCCCTTTGTAGTTTGTGTTGTTN 278  
  
QY 1731 ttttgtgaatgaaagggtg-cgtgcatggaatggcaggtgcatactgactattac 1789  
Db 277 TTGGTGAATGAGAAAGGTGCGCTGGTCATGGAANGCGAGGTGCATATGACTGANTAC 218  
  
QY 1790 tcagacagatgagaaactagctctgagt-ccttgctaatcgcaactcttgtga 1848  
Db 217 TCAGACCAATGAGGAAACTGTAGTCTCTGAGTNCCTTTGCTAANGCAACTCTGTGA 158  
  
QY 1849 attattcattcttttttgcagaatttgatgactgactgacttctctgat 1908  
Db 157 ANTAATCTCAATCTTTTATGCAGAAATTTGANTCTGATGATCAGTACTGCTTCGTGAN 98  
  
QY 1909 tactgtccagcttatagcttccagtttaatagaataccatcgtatgtttcattaaag 1968  
Db 97 TACTGTCCAGCTTATAGTCTCCAGTTTAATGAACATACCATCTGATGTTTCATATTAAG 38  
  
QY 1969 tgtatttaagaaataaac 1988  
Db 37 TGTATTTAAGAAATAAAC 18

RESULT 11  
H24663/c 272 bp mRNA EST 07-JUL-1995  
LOCUS Y140f12.s1 Soares breast 3NbHBst Homo sapiens cDNA clone  
DEFINITION IMAGE:160751 3', mRNA sequence.  
  
ACCESSION H24663  
VERSION H24663.1 GI:8933562  
KEYWORDS EST.  
SOURCE human.  
ORGANISM Homo sapiens  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
Eutheria; Primates; Catarrhini; Homnidae; Homo.  
1 (bases 1 to 272)  
Hillier, L., Clark, N., Dubuque, T., Elliston, K., Hawkins, M.,  
Holman, M., Hultman, M., Kucaba, T., Le, M., Lennon, G., Marra, M.,  
Parsons, J., Rifkin, L., Rohlfing, T., Soares, M., Tan, F.,  
Trevas, E., Waterston, R., Williamson, A., Wohldmann, P. and  
Wilson, R.  
The WashU-Merck EST Project  
Unpublished (1995)  
Contact: Wilton RK  
Washington University School of Medicine  
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108  
Tel: 314 286 1800  
Fax: 314 286 1810  
Email: est@watson.wustl.edu  
Insert Size: 956  
High quality sequence stops: 263  
Source: IMAGE Consortium, LNL  
This clone is available royalty-free through LNL; contact the  
IMAGE Consortium (info@image.llnl.gov) for further information.  
Insert Length: 956 Std Error: 0.00  
Seq primer: Promega -21ml3  
High quality sequence stop: 263.  
Location/Qualifiers

source  
  
Query Match 12.2%; Score 244.6; DB 23; Length 272;  
Best Local Similarity 93.6%; Pred. No. 8.5e-55;  
Matches 247; Conservative 0; Mismatches 17; Indels 0; Gaps 0;  
  
QY 1734 ggtgaatgagaaagctgtcgtggtcatgaaatgcaggtgcatactgactgactactcag 1793  
Db 272 GGTGAATGAGAAAGGTGCTGCTCATGGAATGCGCAGGTGCATATGACTGANTACTCAG 213  
  
QY 1794 agcagatgagaaactgttagctctgagtccttgcataatcgcaactcttgtgaattat 1853  
Db 212 AGCAGANGAGGNAACACTGTAGTCTGCTGAGNCCTTTGCTAANGCAACCCCTGTGAANTAN 153  
  
QY 1854 tctgattctttttatgcagaatttgatgctgatactgactgactgactgactgactg 1913  
Db 152 TCTGATTCTTTTATGCAGAAATTTGNTTCTGATGATCAGTACTGACTTCTGTGNACTG 93  
  
QY 1914 tccagcttatagcttccagtttaatagaataccatcgtatgtttcattatataagtgat 1973  
Db 92 TCCAGCTTATAGTCTTCCAGTTTAATGAACATCACTGATGCTGATGTTTCATATTTAAGTGAT 33  
  
QY 1974 ttaaagaaataaacaccattatt 1997  
Db 32 TTAAAGAAATNAACACAAGTTNT 9

RESULT 12  
AA914687  
LOCUS AA914687 474 bp mRNA EST 14-APR-1998  
DEFINITION v203c03.r1 Soares\_mammary\_gland\_NbMMG Mus musculus cDNA clone  
IMAGE:1314628 5' similar to TR:P97946 p97946 VASCULAR ENDOTHELIAL  
GROWTH FACTOR D ; , mRNA sequence.  
  
ACCESSION AA914687  
VERSION AA914687.1 GI:3054079  
KEYWORDS EST.  
SOURCE house mouse.  
ORGANISM Mus musculus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
1 (bases 1 to 474)  
Marra, M., Hillier, L., Allen, M., Bowles, M., Dietrich, N., Dubuque, T.,  
Geisel, S., Kucaba, T., Lacy, M., Le, M., Martin, J., Morris, M.,  
Schellenberg, K., Steptoe, M., Tan, F., Underwood, K., Moore, B.,  
Theising, B., Wylie, T., Lennon, G., Soares, B., Wilson, R. and  
Waterston, R.  
The WashU-HHMI Mouse EST Project  
Unpublished (1996)  
On Sep 29, 1997 this sequence version replaced gi:1520718.  
Contact: Marra M/Mouse EST Project  
WashU-HHMI Mouse EST Project  
Washington University School of MedicineP





```
Best Local Similarity 75.2%; Pred. NO. 2.2e-21;
Matches 182; Conservative 0; Mismatches 44; Indels 16; Gaps 2;

QY 340 acaattttctagctgcctgatgtcaactgcttagtaataatcagtggaattg-aaatatt 398
    ||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 7 ACACCTTTCAGTAGCTGCCCTGGAAACAACACTGCTTAGTCATCGGTAGACATTTAAAAATATT 66

QY 399 caaaatgtacagagagtggtgtagtgaatgttttcaatgatgtgtacgtccagctggt 458
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 67 CAAATGTATGGAGATGGGAATGGGAATATCCTCATGATGTTCCATGTGTACTTGGT 126

QY 459 gcagggctccagttaataaacaatggaccagtga-----agcgatcatctca 503
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 127 GCAGGGCTTCAGGAGCGAACAATGGACAGTGAAGGATTTTCTTTTCAGGCGATCATCCCG 186

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QY 564 tc 565
Db 247 GC 248
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Search completed: May 16, 2000, 12:32:17  
Job time: 3056 sec

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GenCore version 4.5  
Copyright (c) 1993 - 2000 CompuGen Ltd.

OM nucleic - nucleic search, using sw model

Run on: May 16, 2000, 12:03:26 ; Search time 1284.53 seconds  
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Scoring table: IDENTITY\_NUC  
Gapop 10.0 , Gapext 1.0

Searched: 882769 seqs, -486395729 residues

Total number of hits satisfying chosen parameters: 1765538

Minimum DB seq length: 0  
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Post-processing: Minimum Match 0%  
Listing first 45 summaries

Database :

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55: gb\_hg11:\*  
56: gb\_htg12:\*  
57: gb\_htg13:\*  
58: gb\_htg14:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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2	1998.6	99.7	2029	9	HSAL185	A7000185 Homo Sapi
3	1840.8	91.9	1866	10	HSY12863	Y12863 Homo sapien
4	978.6	48.8	1890	5	A61835	A61835 Sequence 1
5	978.6	48.8	1890	12	MMF1GF	X99572 Mus musculu
6	877.2	43.8	1581	12	D89628	D89628 Mus musculu
7	806.6	40.2	1491	12	AF014827	AF014827 Rattus no
8	664.4	33.2	689	10	HSY12870	Y12870 Homo sapien
9	489.2	24.4	1075	10	HSY12864	Y12864 Homo sapien
10	489.2	24.4	39489	11	HSU69570	U69570 Human Xp22
11	215.8	10.8	231	10	HSY12865	Y12865 Homo sapien
12	198.4	9.9	216	10	HSY12869	Y12869 Homo sapien
13	193.8	9.7	211	10	HSY12866	Y12866 Homo sapien
14	151.4	7.6	169	10	HSY12867	Y12867 Homo sapien
15	138.8	6.9	1257	4	CCY15837	Y15837 Coturnix co
16	137.6	6.9	1804	12	MMU58112	U58112 Mus musculu
17	137.6	6.9	1818	12	MMU73620	U73620 Mus musculu
18	130.6	6.5	1939	10	HSU58111	U58111 Human FLT4
19	129	6.4	1997	10	HSVEGFC	X94216 H.sapiens m
20	129	6.4	2015	10	HSU43142	U43142 Human vascu
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34	53.2	2.7	774	5	E15156	E15156 Human VEGF
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38	53.2	2.7	1195	9	HUMVPF	M27281 Human vascu
39	53.2	2.7	1649	5	A64396	A64396 Sequence 9
40	53.2	2.7	1664	5	A64404	A64404 Sequence 17
41	53.2	2.7	1787	5	A64394	A64394 Sequence 7
42	53.2	2.7	1790	5	A64398	A64398 Sequence 11
43	53.2	2.7	1790	5	A64400	A64400 Sequence 13
44	53.2	2.7	1832	5	A64402	A64402 Sequence 15
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ALIGNMENTS

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DEFINITION
D89630
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VERSION VEGF-D.
SOURCE Homo sapiens lung cDNA to mRNA.
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Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 2028)
Hirata,Y.
Direct Submission
Submitted (29-NOV-1996) to the DBJ/EMBL/GenBank databases. Yuichi
Hirata, Chugai Research Institute for Molecular Medicine, Gene
search program; 153-2, Nagai, Niihari-Mura, Ibaraki 300-41, Japan
(E-mail:hiratayu@chugai-pharm.co.jp, Tel:81-298-30-6211,
Fax:81-298-30-6270)
2 (sites)
Yamada,Y., Nezu,J., Shimane,M. and Hirata,Y.
Molecular cloning of a novel vascular endothelial growth factor,
VEGF-D
Genomics 42 (3), 483-488 (1997)
MEDLINE 97349118
COMMENT On Jan 16, 1998 this sequence version replaced gi:2766189.
Sequence updated (12-Jan-1998).
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DEFINITION Homo Sapiens mRNA for vascular endothelial growth factor-D.  
ACCESSION AJ000185  
VERSION AJ000185.1 GI:2879833  
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1 (bases 1 to 2029)  
Achen, M.G.  
Direct Submission  
Submitted (11-JUL-1997) Achen M.G., Angiogenesis Laboratory, Ludwig  
Institute for Cancer Research, Melbourne Tumour Biology Branch,  
Post Office, Royal Melbourne Hospital, Parkville, Victoria 3050,  
AUSTRALIA  
2 (bases 1 to 2029)  
Achen, M.G., Jeltsch, M., Kukk, E., Makinen, T., Vitali, A., Wilks, A.F.,  
Alitalo, K. and Stacker, S.A.  
Vascular endothelial growth factor D (VEGF-D) is a ligand for the  
tyrosine kinases VEGF receptor 2 (Flk1) and VEGF receptor 3 (Flt4)  
Proc. Natl. Acad. Sci. U.S.A. 95 (2), 548-553 (1998)  
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LOCUS Rattus norvegicus vascular endothelial growth factor D (VEGF-D)
DEFINITION mRNA, complete cds.
ACCESSION AF014827
VERSION AF014827.1 GI:2323338
KEYWORDS
SOURCE Norway rat.
ORGANISM Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
REFERENCE 1 (bases 1 to 1491)
AUTHORS Yamada,Y., Nezu,J., Shimane,M. and Hirata,Y.
TITLE Molecular cloning of a novel vascular endothelial growth factor,
VEGF-D
JOURNAL Genomics 42 (3), 483-488 (1997)
MEDLINE 97349118
REFERENCE 2 (bases 1 to 1491)
AUTHORS Yamada,Y., Hirata,Y., Nezu,J. and Shimane,M.
TITLE Direct Submission
JOURNAL Submitted (17-JUL-1997) Gene Search Program, Chugai Research
Institute for Molecular Medicine, 153-2 NAGAI NIHARI, Ibaraki
300-41, Japan
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DEFINITION Homo sapiens FIGF gene, exon 7.
ACCESSION Y12870
VERSION Y12870.1 GI:2909358
KEYWORDS FIGF gene; growth factor; VEGF-D.
SOURCE human.
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 689)
AUTHORS Rocchigiani,M., Lestingi,M., Luddi,A., Orlandini,M., Franco,B.,
Rossi,E., Ballabio,A., Zuffardi,O. and Oliviero,S.
TITLE Human FIGF: cloning, gene structure, and mapping to chromosome
Xp22.1 between the FIGA and the GRPR genes
JOURNAL Genomics 47 (2), 207-216 (1998)
MEDLINE 98140120
REFERENCE 2 (bases 1 to 689)
AUTHORS Oliviero,S.
TITLE Direct Submission
JOURNAL Department of Molecular Biology, Via Fiorentina 1, Siena, 53100,
ITALY
Related sequence: X99572.
Location/Qualifiers
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DEFINITION Homo sapiens FIGF gene, promoter exon 1 and joined CDS.
ACCESSION Y12864
VERSION Y12864.1 GI:2909351
KEYWORDS FIGF gene; growth factor; VEGF-D.
SOURCE human.
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 1075)
AUTHORS Rocchigiani,M., Lestingi,M., Luddi,A., Orlandini,M., Franco,B.,
Rossi,E., Ballabio,A., Zuffardi,O. and Oliviero,S.
TITLE Human FIGF: cloning, gene structure, and mapping to chromosome
Xp22.1 between the FIGA and the GRPR genes
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JOURNAL	Genomics 47 (2), 207-216 (1998)
MEDLINE	98140120
REFERENCE	2 (bases 1 to 1075)
AUTHORS	Oliviero, S.
TITLE	Direct Submission
JOURNAL	Submitted (29-APR-1997) S. Oliviero, University of Siena, Department of Molecular Biology, Via Fiorentina 1, Siena, 53100, ITALY
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Qy 301 tgaggtttcaaaacttctctctctggagaaatgccttttgaacaaatcttctctagctgcctg 360
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Db 19131 TGAGGTTTCAAACTTCTCTCTGGAGATGCTTTTGAACAAATTTTCTCTAGCTGCCTG 19190
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Qy 361 atgtcaactgcttagtaatacagtgagattgaataattcaaaatgtacagagagtgagta 420
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Db 19191 ATGTCAACTGCTTAGTAATACAGTGAGATTTGAAATTAATTTCAAAATATACAGAGAGTGGGTA 19250
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Qy 421 qtggtgaatttttcatgatgtgtacgtccagctggtgcagggctccagtaataaacat 480
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Qy* 481 ggaccagtgaag 492
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Db 19311 GGACCACTGAAG 19322

RESULT 11
HSY12865 231 bp DNA PRI 02-AUG-1999
LOCUS Homo sapiens FIGF gene, exon 2.
DEFINITION Y12865
ACCESSION Y12865
VERSION Y12865.1 GI:2909353
KEYWORDS FIGF gene; growth factor; VEGF-D.
SOURCE human.
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 231)
AUTHORS Rocchigiani,M., Lestingi,M., Luddi,A., Orlandini,M., Franco,B.,
Rossi,E., Ballabio,A., Zuffardi,O. and Oliviero,S.
TITLE Human FIGF: cloning, gene structure, and mapping to chromosome
Xp22.1 between the FIGA and the GRPR genes
JOURNAL Genomics 47 (2), 207-216 (1998)
MEDLINE 98140120
REFERENCE 2 (bases 1 to 231)
AUTHORS Oliviero,S.
TITLE Direct Submission
JOURNAL Submitted (29-APR-1997) S. Oliviero, University of Siena,
Department of Molecular Biology, Via Fiorentina 1, Siena, 53100,
ITALY
COMMENT Related sequence: X99572.
FEATURES
source
location/Qualifiers
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BASE COUNT 60 a 50 c 56 g 65 t
ORIGIN

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Matches 217; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy 488 tgaagcgatcatctcagtcacattggacgatctgaacagcagatcagggtctgtctta 547
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Qy 548 gtttgaggaaactacttcgaattactcactctgaggactggaagctgtggagatgcaggc 607
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Db 66 GTTTGGAGAACTACTTCCAATTACTCTCTAGGACTTGAAGCTGTGGAGATCGAGC 125
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Qy 608 tgaggctcaaaagttttaccagtatgagactcgtcagcattcccatcggtccactaggt 667
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Db 126 TGAGGCTCAAAAGTTTTTACCAGTATGGACTCTCGCTCAGCATCCCATCGGTCCACTAGGT 185
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Qy 668 ttgcggcaacttctctatgacattgaaacactaaaagtta 706
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Db 186 TTGGCGCAACTTTCTATGACATTGAAACACATAAAGGTA 224
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RESULT 12
HSY12869 216 bp DNA PRI 02-AUG-1999
LOCUS Homo sapiens FIGF gene, exon 6.
DEFINITION Y12869
ACCESSION Y12869
VERSION Y12869.1 GI:2909357
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KEYWORDS FIGF gene; growth factor; VEGF-D.  
SOURCE human.  
ORGANISM Homo sapiens  
REFERENCE 1 (bases 1 to 216)  
AUTHORS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
TITLE Rossi, E., Ballabio, A., Lestingi, M., Luddi, A., Orlandini, M., Franco, B., Human FIGF: cloning, gene structure, and mapping to chromosome Xp22.1 between the FIGA and the GRPR genes  
JOURNAL Genomics 47 (2), 207-216 (1998)  
MEDLINE 98140120  
AUTHORS Oliviero, S.  
TITLE Direct Submission  
JOURNAL Submitted (30-APR-1997) S. Oliviero, University of Siena, Department of Molecular Biology, Via Fiorentina 1, Siena, 53100, ITALY  
COMMENT Related sequence: X99572.  
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Best Local Similarity 99.5%; Pred. No. 3.6e-40;  
Matches 199; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
QY 1143 agaccactctcatctccaggaaacagctctctgtggccacacatgatgtttgacaaaga 1202  
DB 9 AGACCACCTCTCATCTCCAGAACACAGCTCTCTGTGGCCACACATGATGTTGACGAAGA 68  
QY 1203 tcgttcgagtggtgtgtaaaacacacatgtcccaagaatctaatccagacccccaaaaa 1262  
DB 69 TCGTTGCGAGTGTGTCTGTAAACACCATGTCCCAAGATCTTAATCCAGACCCCAAAA 128  
QY 1263 ctgcagttcttgtagtcaaaagaagctctggagacacctgctgccagaagcaagctatt 1322  
DB 129 CTCAGTGTCTTTGAGTGCAAGAAAGTCTGGAGACCTGCTGCCAGACCAAGCTATT 188  
QY 1323 tcaccagacacacctgcagct 1342  
DB 189 TCACCCAGACACCTGCAGGT 208  
RESULT 13  
HSY12866  
LOCUS HSY12866 211 bp DNA PRI 02-AUG-1999  
DEFINITION Homo sapiens FIGF gene, exon 3.  
ACCESSION Y12866  
VERSION Y12866.1 GI:2909354  
KEYWORDS FIGF gene; growth factor; VEGF-D.  
SOURCE human.  
ORGANISM Homo sapiens  
REFERENCE 1 (bases 1 to 211)  
AUTHORS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
TITLE Rossi, E., Ballabio, A., Lestingi, M., Luddi, A., Orlandini, M., Franco, B., Human FIGF: cloning, gene structure, and mapping to chromosome Xp22.1 between the FIGA and the GRPR genes  
JOURNAL Genomics 47 (2), 207-216 (1998)  
MEDLINE 98140120  
AUTHORS Oliviero, S.  
TITLE Direct Submission  
JOURNAL Submitted (30-APR-1997) S. Oliviero, University of Siena, Department of Molecular Biology, Via Fiorentina 1, Siena, 53100, ITALY

Xp22.1 between the FIGA and the GRPR genes  
Genomics 47 (2), 207-216 (1998)  
MEDLINE 98140120  
AUTHORS Oliviero, S.  
TITLE Direct Submission  
JOURNAL Submitted (30-APR-1997) S. Oliviero, University of Siena, Department of Molecular Biology, Via Fiorentina 1, Siena, 53100, ITALY  
COMMENT Related sequence: X99572.  
FEATURES  
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Matches 195; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
QY 702 agttatagatgaagaatgcaagaactcagtcagcccttagagaaacgtgctggaggt 761  
DB 9 AGTTATAGATGAAGAATGGCAAAATCTCAGTCGACCCCTAGAGAAACGTCGCTGGAGGT 68  
QY 762 ggcagtgagctggggaagtagtaccacacattctcaagccccctgtgtgaactgtt 821  
DB 69 GGCCAGTGAAGCTGGGGAAGAGTACCAACACATCTTCAAGCCCCCTGTGTGAACGTGT 128  
QY 822 ccgattgtgtgctgttgaatgaagagagccttatctgtatgaacaccagcctcgta 881  
DB 129 CCGATGTGGTGGCTGTGCAATGAAGAGAGCCCTATCTGTATGAACACACGACCTCGTA 188  
QY 882 catttccaaacagctct 898  
DB 189 CATTTCCAAACAGGTAT 205  
RESULT 14  
HSY12867  
LOCUS HSY12867 169 bp DNA PRI 02-AUG-1999  
DEFINITION Homo sapiens FIGF gene, exon 4.  
ACCESSION Y12867  
VERSION Y12867.1 GI:2909355  
KEYWORDS FIGF gene; growth factor; VEGF-D.  
SOURCE human.  
ORGANISM Homo sapiens  
REFERENCE 1 (bases 1 to 169)  
AUTHORS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
TITLE Rocchigiani, M., Lestingi, M., Luddi, A., Orlandini, M., Franco, B., Rossi, E., Ballabio, A., Zuffardi, O. and Oliviero, S. Human FIGF: cloning, gene structure, and mapping to chromosome Xp22.1 between the FIGA and the GRPR genes  
JOURNAL Genomics 47 (2), 207-216 (1998)  
MEDLINE 98140120  
AUTHORS Oliviero, S.  
TITLE Direct Submission  
JOURNAL Submitted (30-APR-1997) S. Oliviero, University of Siena, Department of Molecular Biology, Via Fiorentina 1, Siena, 53100, ITALY

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COMMENT      Related sequence: X99572.
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BASE COUNT   46 a  44 c  32 g  47 t
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Search completed: May 16, 2000, 14:35:16  
Job time: 9110 sec

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GenCore version 4.5  
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OM protein - protein search, using sw model

Run on: May 16, 2000, 15:27:05 ; Search time 42.49 seconds  
(without alignments)  
253.732 Million cell updates/sec

Title: US-09-214-982-1

Perfect score: 1963

Sequence: 1 MYREVVVVVFMFLYVLVQ.....HCRFPKRAAQPHSRKNP 354

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 83857 seqs, 30454973 residues

Total number of hits satisfying chosen parameters: 83857

Minimum DB seq length: 0

Maximum DB seq length: 1000000

Post-processing: Minimum Match 0%

Listing first 45 summaries

Database : SwissProt\_38:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	704.5	35.9	419	1	VEGC_HUMAN
2	696	35.5	415	1	VEGC_MOUSE
3	200	10.2	190	1	VEGF_BOVIN
4	198	10.1	190	1	VEGF_PIG
5	198	10.1	214	1	VEGF_MOUSE
6	196	10.0	215	1	VEGF_HUMAN
7	194	9.9	190	1	VEGF_RAT
8	185	9.4	184	1	VEGF_CAVPO
9	181.5	9.2	1700	1	BAR3_CHITE
10	176.5	9.0	188	1	VEGB_MOUSE
11	175.5	8.9	188	1	VEGB_HUMAN
12	167.5	8.5	146	1	VEGF_SHEEP
13	164	8.4	148	1	VEGH_OREN7
14	161	8.2	245	1	PDGB_FELCA
15	159.5	8.1	170	1	PLGF_HUMAN
16	155.5	7.9	216	1	VEGF_CHICK
17	155	7.9	158	1	PLGF_MOUSE
18	148	7.5	133	1	VEGH_OREN2
19	145	7.4	241	1	PDGB_HUMAN
20	135	6.9	241	1	PDGB_MOUSE
21	134.5	6.9	241	1	PDGB_SHEEP
22	133.5	6.8	225	1	PDGB_RAT
23	125.5	6.4	211	1	PDGA_HUMAN
24	122	6.2	226	1	TSIS_SMSAV
25	120	6.1	226	1	PDGA_XENLA
26	118	6.0	965	1	YNC3_YEAST
27	115.5	5.9	1964	1	NTC4_MOUSE
28	113	5.8	204	1	PDGA_RAT
29	113	5.8	846	1	ITBX_DROME
30	112	5.7	3635	1	LMA5_MOUSE
31	111	5.7	213	1	PDGA_RABIT
32	111	5.7	2201	1	TENA_HUMAN
33	109	5.6	677	1	SP87_DICDI
34	109	5.6	1104	1	NFX1_HUMAN

ALIGNMENTS

RESULT 1	VEGC_HUMAN	ID	VEGC_HUMAN	STANDARD;	PRT;	419 AA.
AC	P49767;					
DT	01-OCT-1996 (Rel. 34, Created)					
DT	01-OCT-1996 (Rel. 34, Last sequence update)					
DT	15-JUL-1999 (Rel. 38, Last annotation update)					
DE	VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (VASCULAR					
DE	ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRP) (FLT4 LIGAND).					
GN	VEGFC.					
OS	Homo sapiens (Human).					
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;					
OC	Eutheria; Primates; Catarrhini; Hominidae; Homo.					
RN	[1]					
RP	SEQUENCE FROM N.A., AND SEQUENCE OF 103-120.					
RX	MEDLINE: 96178224.					
RA	Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,					
RA	Saksela O., Kalkkinen N., Alitalo K.;					
RT	"A novel vascular endothelial growth factor, VEGF-C, is a ligand for					
RT	the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases.";					
RL	EMBO J. 15:290-298(1996).					
RN	[2]					
RP	ERRATUM.					
RX	MEDLINE: 96203094.					
RA	Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,					
RA	Saksela O., Kalkkinen N., Alitalo K.;					
RL	EMBO J. 15:1751-1751(1996).					
RN	[3]					
RP	SEQUENCE FROM N.A.					
RX	MEDLINE: 96312526.					
RA	Lee J., Gray A., Yuan J., Luoh S.-M., Avraham H., Wood W.I.;					
RT	"Vascular endothelial growth factor-related protein: a ligand and					
RT	specific activator of the tyrosine kinase receptor Flt4.";					
RL	Proc. Natl. Acad. Sci. U.S.A. 93:1988-1992(1996).					
RN	[4]					
RP	SEQUENCE FROM N.A.					
RA	Fitz L., Morris J.C., Towler P.S., Long A.J., Greco R.,					
RA	Burgess P., Giannotti J., Chiarletta A., Hennessey D., Kovacic S.,					
RA	Fitzgerald M., Scaltretto H., Weich N., Neben S., Finnerty H.,					
RA	Zollner R., Wang J., Nickbarg E., Gassaway R., Turner K.,					
RA	Wood C.R.;					
RL	Submitted (JUN-1996) to the EMBL/GenBank/DBJ databases.					
CC	-I- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL					
CC	CELL GROWTH.					
CC	-I- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.					
CC	-I- PTM: PROBABLY PROTEOLITICALLY PROCESSED IN THE C-TERMINUS.					
CC	-I- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.					
CC	-----					
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CC	or send an email to <a href="mailto:license@isb-sib.ch">license@isb-sib.ch</a> ).					
CC	-----					
DR	EMBL; X94216; CAA63907.1; -					

P35555 homo sapien  
P20033 mus musculus  
P04412 drosophila  
Q07954 homo sapien  
P35440 gallus gall  
P30432 drosophila  
Q61555 mus musculus  
P10039 gallus gall  
Q29116 sus scrofa  
P35556 homo sapien  
Q24025 drosophila



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RESULT 3
VEGF_BOVIN
ID VEGF_BOVIN STANDARD; PRT; 190 AA.
AC P15691;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 01-OCT-1996 (Rel. 34, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE PERMEABILITY FACTOR) (VPF).
GN VEGF.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae;
OC Bovinae; Bos.
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 27-47.
RX MEDLINE; 90069608.
RA Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
RT "Vascular endothelial growth factor is a secreted angiogenic
RT mitogen.";
RL Science 246:1306-1309(1989).
RN [2]
RP SEQUENCE OF 27-190 FROM N.A.
RX MEDLINE; 90121225.
RA Tischer E., Gospodarowicz D., Mitchell R., Silva M., Schilling J.,
RA Lau K., Crisp T., Fiddes J.C., Abraham J.A.;
RT "Vascular endothelial growth factor: a new member of the platelet-
RT derived growth factor gene family.";
RL Biochem. Biophys. Res. Commun. 165:1198-1206(1989).
RN [3]
RP SEQUENCE OF 27-31.
RX MEDLINE; 89286596.
RA Ferrara N., Henzel W.J.;
RT "Pituitary follicular cells secrete a novel heparin-binding growth
RT factor specific for vascular endothelial cells.";
RL Biochem. Biophys. Res. Commun. 161:851-858(1989).
CC -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC PERMEABILITY.
CC -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
CC -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
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CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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CC EMBL; M31836; AAA30804.1; -
CC EMBL; M33750; AAA30805.1; -
CC PIR; A33255; A33255.
CC PIR; A33787; A33787.
CC PIR; B40080; B40080.
CC HSP; P15692; 2VGH.
CC PROSITE; PS00249; PDGF; 1.
CC PFAM; PF00341; PDGF; 1.
CC Mitogen; Growth factor; Glycoprotein; Signal.
FT CHAIN 1 26
FT SIGNAL 1 26
FT CHAIN 27 190
FT DISULFID 51 93
FT DISULFID 82 127
FT DISULFID 86 129
FT DISULFID 76 76
FT DISULFID 85 85
FT DISULFID 100 100
FT CARBOHYD 100 100
FT -----
FT VARSPLIC 139 183 MISSING (IN ISOFORM BETA).
FT VARSPLIC 184 184 R -> K (IN ISOFORM BETA).
SQ SEQUENCE 190 AA; 22310 MW; EDBF903E46E24789 CRC64;
Query Match 10.2%; Score 200; DB 1; Length 190;
Best Local Similarity 25.4%; Pred. No. 5.9e-09;
Matches 57; Conservative 21; Mismatches 66; Indels 80; Gaps 8;
QY 97 ETLLKVIDEQRQTCSPRETCEVASELGKSTNTFFKPPCVNFRGCGGCGNEESLCMNT 156
Db 38 EVVKFMD-VYQSFRCPIETLVDFIOEYDEIEFIEFKPCVPLMRGCGGCGNDESLCVPT 96
QY 157 STSYISKOLFSEISVPLTSVPCLPVVANHTGCKCLPTAPRHPYSIIRSIQIPEEDRCS 216
Db 97 EEFNITQMIRIK-----PHOSQH-----IGMSFLQ 123
QY 217 HSKKLCPIDMLWDSNKKCK-----VLQEEENPLAGTEDHSHLQEPALCGPHMFEDECRCEC 271
Db 124 H-----NKECPRPKDKARQENP-----CGP----- 145
QY 272 VKTTPCPKDLIOHPKNCSECFECKESLETCCQKHKLPHDPFTCSCE 315
Db 145 -CSERRKHLFVQDPQCKC-SCKNTDSRCKARQELNELNERTCRCD 186
RESULT 4
VEGF_PIG
ID VEGF_PIG STANDARD; PRT; 190 AA.
AC P49151;
DT 01-FEB-1996 (Rel. 33, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 01-OCT-1996 (Rel. 34, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE PERMEABILITY FACTOR) (VPF).
GN VEGF.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
RN [1]
RP SEQUENCE FROM N.A.
RX TISSUE=HEART;
RX MEDLINE; 95143284.
RA Sharma H.S., Tang Z.H., Gho B.C.H., Verdouw P.D.;
RT "Nucleotide sequence and expression of the porcine vascular
RT endothelial growth factor.";
RL Biochim. Biophys. Acta 1260:235-238(1995).
CC -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC PERMEABILITY (BY SIMILARITY).
CC -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED (BY SIMILARITY).
CC -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC SIMILARITY).
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; X81380; CAA57143.1; -
CC HSP; P15692; 2VGH.
CC PROSITE; PS00249; PDGF; 1.
CC PFAM; PF00341; PDGF; 1.
CC Mitogen; Growth factor; Glycoprotein; Signal.
FT CHAIN 1 26
FT SIGNAL 1 26
FT CHAIN 27 190
FT DISULFID 51 93
FT DISULFID 82 127
FT DISULFID 86 129
FT DISULFID 76 76
FT DISULFID 85 85
FT DISULFID 100 100
FT CARBOHYD 100 100
FT -----
FT VARSPLIC 139 183 MISSING (IN ISOFORM BETA).
FT VARSPLIC 184 184 R -> K (IN ISOFORM BETA).
SQ SEQUENCE 190 AA; 22310 MW; EDBF903E46E24789 CRC64;
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FT DISULFID 86 129 BY SIMILARITY.
FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
FT CARBOHYD 100 100 POTENTIAL.
SQ SEQUENCE 190 AA; 22368 MW; 04D40B8D7913047F CRC64;

Query Match 10.1%; Score 198; DB 1; Length 190;
Best Local Similarity 24.2%; Pred. No. 8.4e-09;
Matches 54; Conservative 24; Mismatches 67; Indels 78; Gaps 8;

QY 97 ETLKVIDEQRTOCSPRETCEVEASELKGKSTNTFFKPCPVNVFRCGCCNEESLICMNT 156
DB 38 EVVKFMD-VYQSYCRPIETLVDIFQEPDELEYFKSCVPLMRCGCCNDGLEGCVPT 96
QY 157 STSYISKQLEISVPLTSPV-----ELVPVKVANHTGCKCLPTAPRHPYSIIRRSIQIPEE 212
DB 97 EBFNITMIMRIK-----PHQGQHGEMSFLOHKNKCEK-----PKK 133
QY 213 DRCSHKKLCPTDMLWDSNKKCVQLENPLAGTEDHSHLQEPALCGPHMFMDEDRCECV 272
DB 134 DRA-----RQENP-----CGP----- 145
QY 273 KCTPCPKDLIOHPKNCSECKESLETCCQKHKLPHPTCSCE 315
DB 145 CSERRKHLFVQDPQCKC-SCNTDSRCKARQLELNERTCRCD 186

RESULT 5
VEGF_MOUSE
ID VEGF_MOUSE STANDARD; PRT; 214 AA.
AC Q00731.
DT 01-APR-1993 (Rel. 25, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR PERMEABILITY FACTOR) (VPF).
GN VEGF.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
RN [1]
RN SEQUENCE FROM N.A.
RX MEDLINE; 92274860.
RA Breier G., Albrecht U., Sterrer S., Risau W.
RT "Expression of vascular endothelial growth factor during embryonic angiogenesis and endothelial cell differentiation."
RL Development 114:521-532(1992).
RN [2]
RN SEQUENCE FROM N.A. (VEGF-1).
RX MEDLINE; 92355593.
RA Claffey K.P., Wilkison W.O., Spiegelman B.M.;
RT "Vascular endothelial growth factor. Regulation by cell differentiation and activated second messenger pathways."
RL J. Biol. Chem. 267:16317-16322(1992).
RN [3]
RN SEQUENCE OF 1-3 FROM N.A.
RX MEDLINE; 96216498.
RA Shima D.T., Kuroki M., Deutsch U., Ng Y., Adams A.P., D'Amore P.A.;
RT "The mouse gene for vascular endothelial growth factor. Genomic structure, definition of the transcriptional unit, and characterization of transcriptional and post-transcriptional regulatory sequences."
RL J. Biol. Chem. 271:3877-3883(1996).
CC -1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR PERMEABILITY.
CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
CC -1- SUBCELLULAR LOCATION: VEGF-1 AND VEGF-2 ARE SECRETED WHILE VEGF-3 REMAINS CELL-SURFACE ASSOCIATED UNLESS RELEASED BY HEPARIN.
CC -1- ALTERNATIVE PRODUCTS: THREE FORMS (VEGF-1, VEGF-2 AND VEGF-3) ARE PRODUCED AS A RESULT OF ALTERNATIVE SPLICING OF THE SAME GENE. THE

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LONGEST FORM (VEGF-3, SHOWN HERE) CONTAINS A BASIC INSERT LINKED TO CELL-ASSOCIATION/HEPARIN-BINDING.

-1- TISSUE SPECIFICITY: IN DEVELOPING EMBRYOS, EXPRESSED MAINLY IN THE CHOROID PLEXUS, PARAVENTRICULAR NEUROEPITHELIUM, PLACENTA AND KIDNEY GLOMERULI. ALSO FOUND IN BRONCHIAL EPITHELIUM, ADRENAL GLAND AND IN SEMINIFEROUS TUBULES OF TESTIS. HIGH EXPRESSION OF VEGF CONTINUES IN KIDNEY GLOMERULI AND CHOROID PLEXUS IN ADULTS.

-1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.

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EMBL; S37052; AAB22252.1; -;  
EMBL; S38083; AAB22253.1; -;  
EMBL; S38100; AAB22254.1; -;  
EMBL; M95200; AAA40547.1; -;  
EMBL; U41383; CAB35545.1; -;  
PIR; A43351; A43351.  
DR HSP; P15692; 2VGH.  
DR MGD; MG1:103178; VEGF.  
DR PROSITE; PS00249; PDGF; 1.  
DR PFAM; PF00341; PDGF; 1.  
KW Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal.  
FT SIGNAL 1 26  
FT CHAIN 27 214  
FT DISULFID 51 93  
FT DISULFID 82 127  
FT DISULFID 86 129  
FT DISULFID 76 76  
FT DISULFID 85 85  
FT CARBOHYD 100 100  
FT VARSPLIC 140 140  
FT VARSPLIC 141 164  
FT VARSPLIC 141 208  
FT CONFLICT 117 118  
SQ SEQUENCE 214 AA; 25283 MW; B5540B51E4B6E17 CRC64;  
BY SIMILARITY.  
VASCULAR ENDOTHELIAL GROWTH FACTOR.  
BY SIMILARITY.  
BY SIMILARITY.  
BY SIMILARITY.  
INTERCHAIN (BY SIMILARITY).  
INTERCHAIN (BY SIMILARITY).  
PROBABLE.  
K -> N (IN ISOFORM VEGF-1).  
MISSING (IN ISOFORM VEGF-1).  
MISSING (IN ISOFORM VEGF-2).  
GE -> ER (IN REF. 2).  
SEQUENCE 214 AA; 25283 MW; B5540B51E4B6E17 CRC64;

Query Match 10.1%; Score 198; DB 1; Length 214;  
Best Local Similarity 23.7%; Pred. No. 9.5e-09;  
Matches 63; Conservative 35; Mismatches 94; Indels 74; Gaps 11;

QY 62 WKLWRCRLRL-----KSFTSMDSRSASHRSTRFAATFYDIETLKVIDEWORTQSCP 113  
DB 7 WYHWTALLLLXHLHAKWSQAAPTTEGEQKSH-----EVIKFMD-VYQSYCRP 53  
QY 114 RETCCEVASELKGKSTNTFFKPCPVNVFRCGCCNEESLICMNTSTSYISKQLEISVPLT 173  
DB 54 IETLVDIFQEPDELEYFKSCVPLMRCGCCNDGLEGCVPTSESNITMIMRIK-PHQ 112  
QY 174 SVPELVPVKVANHTGCKCLPTAPRHPYSIIRRSIQIPEDRCSHKKLCPLDMLWDSNKK 233  
DB 113 S-QHIGEMSFLOHNRCEK-----PKKDRTPKPKK-----SVRGKKGK 149  
QY 234 KCVLOENPLAGTEDHSHLQEPALCGPHMFMDEDRCECVCKTPCPKD-----LIQHPKNC 289  
DB 150 QRRKRRKSKFRKSWSVH-----CE-----PCSEKRRKHLFVQDPQCK 185  
QY 290 CFECKESLETCCQKHKLPHPTCSCE 315  
DB 186 C-SCNTDSRCKARQLELNERTCRCD 210  
RESULT 6  
VEGF\_HUMAN  
ID VEGF\_HUMAN STANDARD; PRT; 215 AA.  
AC P15692;  
DT 01-APR-1990 (Rel. 14, Created)

DT 01-APR-1990 (Rel. 14, Last sequence update)  
 DT 15-JUL-1999 (Rel. 38, Last annotation update)  
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR  
 DE PERMEABILITY FACTOR) (VPF).  
 GN VEGF OR VEGFA.  
 OS Homo sapiens (Human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 OC Eutheria; Primates; Catarrhini; Hominidae; Homo.  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE; 90069608.  
 RA Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;  
 RT "Vascular endothelial growth factor is a secreted angiogenic  
 RT mitogen.";  
 RL Science 246:1306-1309(1989).  
 RN [2]  
 RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.  
 RX MEDLINE; 90069609.  
 RA Keck P.J., Hauser S.D., Krivi G., Sanzo K., Warren T., Feder J.,  
 RA Connolly D.T.;  
 RT "Vascular permeability factor, an endothelial cell mitogen related to  
 RT PDGF.";  
 RL Science 246:1309-1312(1989).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE; 91268072.  
 RA Tischer E., Mitchell R., Hartman T., Silva M., Gospodarowicz D.,  
 RA Fiddes J.C., Abraham J.A.;  
 RT "The human gene for vascular endothelial growth factor. Multiple  
 RT protein forms are encoded through alternative exon splicing.";  
 RL J. Biol. Chem. 266:11947-11954(1991).  
 RN [4]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE; 92231879.  
 RA Weindel K., Marne D., Welch H.A.;  
 RT "AIDS-associated Kaposi's sarcoma cells in culture express vascular  
 RT endothelial growth factor.";  
 RL Biochem. Biophys. Res. Commun. 183:1167-1174(1992).  
 RN [5]  
 RP PRELIMINARY SEQUENCE OF 27-36; 43-50 AND 59-81.  
 RX MEDLINE; 90062112.  
 RA Connolly D.T., Olander J.V., Heuvelman D., Nelson R., Monsell R.,  
 RA Siegel N., Haymore B.L., Leimgruber R., Feder J.;  
 RT "Human vascular permeability factor. Isolation from U937 cells.";  
 RL J. Biol. Chem. 264:20017-20024(1989).  
 RN [6]  
 RP SEQUENCE OF 27-41.  
 RX MEDLINE; 93145946.  
 RA Fiebig B.L., Jaeger B., Schoellmann C., Weindel K., Wiltling J.,  
 RA Kochs G., Marne D., Hug H., Welch H.A.;  
 RT "Synthesis and assembly of functionally active human vascular  
 RT endothelial growth factor homodimers in insect cells.";  
 RL Eur. J. Biochem. 211:19-26(1993).  
 RN [7]  
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS) OF 34-135.  
 RX MEDLINE; 97352774.  
 RA Muller Y.A., Li B., Christinger H.W., Wells J.A., Cunningham B.C.,  
 RA de Vos A.M.;  
 RT "Vascular endothelial growth factor: crystal structure and functional  
 RT mapping of the kinase domain receptor binding site.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 94:7192-7197(1997).  
 RN [8]  
 RP X-RAY CRYSTALLOGRAPHY (1.93 ANGSTROMS) OF 34-135.  
 RX MEDLINE; 98035455.  
 RA Muller Y.A., Christinger H.W., Keyt B.A., de Vos A.M.;  
 RT "The crystal structure of vascular endothelial growth factor (VEGF)  
 RT refined to 1.93-A resolution: multiple copy flexibility and receptor  
 RT binding.";  
 RL Structure 5:1325-1338(1997).  
 RN [9]  
 RP X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 39-134.  
 RX MEDLINE; 99119204.  
 RA Wiesmann C., Christinger H.W., Cochran A.G., Cunningham B.C.,

RA Fairbrother W.J., Keenan C.J., Meng G., de Vos A.M.;  
 RT "Crystal structure of the complex between VEGF and a receptor-blocking  
 RT peptide.";  
 RL Biochemistry 37:17765-17772(1998).  
 RN [10]  
 RP STRUCTURE BY NMR OF 34-135.  
 RX MEDLINE; 97477915.  
 RA Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,  
 RA Starovasnik M.A.;  
 RT "1H, 13C, and 15N backbone assignment and secondary structure of the  
 RT receptor-binding domain of vascular endothelial growth factor.";  
 RL Protein Sci. 6:2250-2260(1997).  
 RN [11]  
 RP STRUCTURE BY NMR OF 137-215.  
 RX MEDLINE; 98298440.  
 RA Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,  
 RA Starovasnik M.A.;  
 RT "Solution structure of the heparin-binding domain of vascular  
 RT endothelial growth factor.";  
 RL Structure 6:637-648(1998).  
 CC -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL  
 CC CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR  
 CC PERMEABILITY.  
 CC -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.  
 CC -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR  
 CC TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY  
 CC SIMILARITY).  
 CC -!- ALTERNATIVE PRODUCTS: FOUR FORMS OF VEGF ARE PRODUCED BY  
 CC ALTERNATIVE SPLICING OF THE SAME GENE (VEGF-121, VEGF-165,  
 CC VEGF-189 AND VEGF-215).  
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.  
 CC -----  
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 CC -----  
 DR EMBL; M32977; AAA35789.1; -  
 DR EMBL; M27281; AAA36807.1; -  
 DR EMBL; M63978; AAA36804.1; -  
 DR EMBL; M63971; AAA36804.1; JOINED.  
 DR EMBL; M63972; AAA36804.1; JOINED.  
 DR EMBL; M63973; AAA36804.1; JOINED.  
 DR EMBL; M63974; AAA36804.1; JOINED.  
 DR EMBL; M63975; AAA36804.1; JOINED.  
 DR EMBL; M63976; AAA36804.1; JOINED.  
 DR EMBL; M63977; AAA36804.1; JOINED.  
 DR EMBL; X62568; CAA44447.1; -  
 DR PIR; A34492; A34492.  
 DR PIR; A40079; A40079.  
 DR PIR; A40080; A40080.  
 DR PIR; A40454; A40454.  
 DR PIR; B40454; B40454.  
 DR PIR; C40454; C40454.  
 DR PIR; JQ1463; JQ1463.  
 DR PIR; JQ1464; JQ1464.  
 DR PIR; S17348; S17348.  
 DR PDB; 1VGH; 08-APR-98.  
 DR PDB; 2VGH; 08-APR-98.  
 DR PDB; 1VPF; 08-APR-98.  
 DR PDB; 2VPF; 29-JUL-98.  
 DR PDB; 1VPP; 23-FEB-99.  
 DR MIM; 192240; -  
 DR PROSITE; PS00249; PDGF; 1.  
 DR PFAM; PF00341; PDGF; 1.  
 KW Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal;  
 KW 3D-structure.  
 FT SIGNAL 1 26  
 FT CHAIN 27 215 VASCULAR ENDOTHELIAL GROWTH FACTOR.  
 FT DISULFID 52 94

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FT DISULFID 83 128
FT DISULFID 87 130
FT DISULFID 77 77 INTERCHAIN.
FT DISULFID 86 86 INTERCHAIN.
FT CARBOHYD 101 101
FT VARSPLIC 141 141
FT VARSPLIC 142 165
FT VARSPLIC 142 209 MISSING (IN ISOFORM VEGF-165).
SQ SEQUENCE 215 AA; 25173 MW; 7B9759AD5871FF33 CRC64;

Query Match 10.0%; Score 196; DB 1; Length 215;
Best Local Similarity 25.6%; Pred. No. 1.4e-08;
Matches 57; Conservative 26; Mismatches 86; Indels 54; Gaps 8;

QY 97 ETLKVIDEORTQCSPRETCVEASELGKSTNTFFKPCVNVFRCGGCCNEESLICMNT 156
Dp 39 EVVKFMD-VYQSYCHPIETLVDIFQEPDEIEYIFKPCVPLMRGCGCNDGLECVPT 97
QY 157 STSYISKQLFEISVPLTSVP-----ELVPVKVANHTGCKCLPTAPRHPYSIIIRSIQIPEE 212
Dp 98 EESNITMQIMRIK-----PHQGHIGEMSFLOHNNKCECR-----PKK 134
QY 213 DRCSHKKLCPIDMLWDSNKKCKVLQEEENPLAGTEDHSHLQEPALCGPHMFMFEDRCCEV 272
Dp 135 DRARQEKK-----SVRGKGGKGRK-----RKSRYSKWSVPCGP----- 170
QY 273 CRTQPCPDLIQHPKNCSECKESLETCQKHKLHPDTCSE 315
Dp 170 CSERRKHLFVQDPQCKC-SCKNTDSRCKARQLELNERTCRCD 211

RESULT 7
VEGF_RAT
ID VEGF_RAT STANDARD; PRT; 190 AA.
AC P16612;
DT 01-AUG-1990 (Rel. 15, Created)
DT 01-AUG-1990 (Rel. 15, Last sequence update)
DT 01-OCT-1996 (Rel. 34, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR PERMEABILITY FACTOR) (VFP).
GN VEGF.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia;
OC Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
RN [1]
RX MEDLINE; 90207249.
RA Conn G., Bayne M.L., Soderman D.D., Kwok P.W., Sullivan K.A.,
RA Palsi T.M., Hope D.A., Thomas K.A.;
RT "Amino acid and cDNA sequences of a vascular endothelial cell mitogen that is homologous to platelet-derived growth factor.";
RL Proc. Natl. Acad. Sci. U.S.A. 87:2628-2633(1990).
CC -1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR PERMEABILITY.
CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
CC -1- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY SIMILARITY).
CC -1- TISSUE SPECIFICITY: EXPRESSED IN THE PITUITARY, IN BRAIN, IN PARTICULARLY IN SUPRATENTORIAL AND PARAVENTRICULAR NUCLEI AND THE CHOROID PLEXUS. ALSO FOUND ABUNDANTLY IN THE CORPUS LUTEUM OF THE OVARY AND IN KIDNEY GLOMERULI.
CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; M32167; AAA41211.1; -.
CC FIR; A35987; A35987.
CC HSP; P15692; 2VGH.
CC PROSITE; PS00249; PDGF; 1.
CC PFAM; PF00341; PDGF; 1.
CC Mitogen; Growth factor; Glycoprotein; Signal.
FT SIGNAL 1 26
FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT DISULFID 51 93 BY SIMILARITY.
FT DISULFID 82 127 BY SIMILARITY.
FT DISULFID 86 129 BY SIMILARITY.
FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
FT CARBOHYD 100 100
SQ SEQUENCE 190 AA; 22396 MW; 589374010441F377 CRC64;

Query Match 9.9%; Score 194; DB 1; Length 190;
Best Local Similarity 23.8%; Pred. No. 1.7e-08;
Matches 53; Conservative 27; Mismatches 65; Indels 78; Gaps 8;

QY 97 ETLKVIDEORTQCSPRETCVEASELGKSTNTFFKPCVNVFRCGGCCNEESLICMNT 156
Dp 38 EVVKFMD-VYQSYCHPIETLVDIFQEPDEIEYIFKPCVPLMRGCGCNDGLECVPT 96
QY 157 STSYISKQLFEISVPLTSVPPELVKPVKVANHTGCKCLPTAPRHPYSIIIRSIQIPEDRCS 216
Dp 97 SESNITMQIMRIK-PHQ-S-OHIGEMSFLOHNSCECR-----PKKDRTK 137
QY 217 HSKKLCPIIDMLWDSNKKCKVLQEEENPLAGTEDHSHLQEPALCGPHMFMFEDRCCEVCVPT 276
Dp 138 -----PENHCE-----P 144

RESULT 8
VEGF_CAVPO
ID VEGF_CAVPO STANDARD; PRT; 164 AA.
AC P26617;
DT 01-AUG-1992 (Rel. 23, Created)
DT 01-AUG-1992 (Rel. 23, Last sequence update)
DT 01-OCT-1996 (Rel. 34, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) (VASCULAR PERMEABILITY FACTOR) (VFP).
GN VEGF.
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
RN [1]
RX MEDLINE; 90207249.
RA Conn G., Bayne M.L., Soderman D.D., Kwok P.W., Sullivan K.A.,
RA Palsi T.M., Hope D.A., Thomas K.A.;
RT "Amino acid and cDNA sequences of a vascular endothelial cell mitogen that is homologous to platelet-derived growth factor.";
RL Proc. Natl. Acad. Sci. U.S.A. 87:2628-2633(1990).
CC -1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR PERMEABILITY.
CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
CC -1- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY SIMILARITY).
CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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CC -----
DR EMBL; M84230; AAA37057.1; -.
DR HSSP; P15692; 2VGH; PDGF; 1.
DR PROSITE; PS00249; PDGF; 1.
DR PFAM; PF00341; PDGF; 1.
KW Mitogen; Growth factor; Glycoprotein.
FT DISULFID 25 67 BY SIMILARITY.
FT DISULFID 56 101 BY SIMILARITY.
FT DISULFID 60 103 BY SIMILARITY.
FT DISULFID 50 50 INTERCHAIN (BY SIMILARITY).
FT DISULFID 59 59 INTERCHAIN (BY SIMILARITY).
FT CARBOHYD 74 74 POTENTIAL.
SQ SEQUENCE 164 AA; 19330 MW; 9EB86A81A9D5DCA4 CRC64;

Query Match          9.4%; Score 185; DB 1; Length 164;
Best Local Similarity 24.1%; Pred. No. 7.3e-08;
Matches 54; Conservative 23; Mismatches 67; Indels 80; Gaps 8;

QY 97 ETLKVIDEQRQTSRETVEASELGKSTNTFFKPPCVNVFRGCGCCNEESLICMNT 156
Db 12 EEVKFMD-VTKRSTCRPIEMLDIFQYDPIEYIFKPSVPLMRGCGCCNDESLECVPT 70

QY 157 STYVISKQLFEISVPLTSVPVLPVKNHTGCKCLPTAPRHPYSIIRSIQIPEEDRCS 216
Db 71 EEFNITQIMRIK-----PHQGH-----IGEMSFLQ 97

QY 217 HSKKLCPLDMLDSNCKC-----VLQENPLAGTEDSHLQEPALCGPHMFDORCEC 271
Db 98 HS-----KCECRPKKEKARQNP-----CGP----- 119

QY 272 VCKTPCKDLIHPKNCSCFECKESLETCCQKHKLHPDTCSE 315
Db 119 -CSERRKHLFVQDPQTKC-SCRNTDSRKARQLNELNERTCRCD 160

RESULT 9
BAR3_CHITE
ID BAR3_CHITE STANDARD; PRT; 1700 AA.
AC Q03376;
DT 01-OCT-1993 (Rel. 27, Created)
DT 01-OCT-1993 (Rel. 27, Last sequence update)
DT 01-OCT-1994 (Rel. 30, Last annotation update)
DE BALBIANI RING PROTEIN 3 PRECURSOR.
GN BR3.
OS Chironomus tentans (Midge).
OC Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
OC Pterygota; Neoptera; Endopterygota; Diptera; Nematocera;
OC Chironomidae; Chironomidae; Chironominae; Chironomus.
RN [1]
SEQUENCE FROM N.A.
RC TISSUE-SALIVARY GLAND;
RX MEDLINE; 90172404.
RA Paulsson G., Lendahl U., Galli J., Ericsson C., Wieslander L.;
RT "The Balbiani ring 3 gene in Chironomus tentans has a diverged
repetitive structure split by many introns.";
RL J. Mol. Biol. 211:331-349(1990).
CC -1- FUNCTION: USED BY THE LARVAE TO CONSTRUCT A SUPRAMOLECULAR
STRUCTURE, THE LARVAL TUBE. BALBIANI RING PROTEIN 3 COULD PLAY A
ROLE AS A TRANSPORT PROTEIN THAT BINDS TO OTHER PROTEINS
INTRACELLULARLY AND IN THE GLAND LUMEN IN ORDER TO PREVENT THESE
FROM FORMING WATER-INSOLUBLE FIBERS TOO EARLY.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- TISSUE SPECIFICITY: SALIVARY GLAND.
CC -1- DOMAIN: HAS 82 APPROXIMATE REPEATS OF CYS-X-CYS-X-CYS.
CC -----
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CC -----
DR EMBL; X52263; CAA36506.1; -.
DR PIR; S08167; S08167.
DR HSSP; P18055; 2MRB.
DR PRINTS; PR00876; MTNEMATODE.
KW Repeat; Signal.
FT SIGNAL 1 ? POTENTIAL.
FT CHAIN 2 1700 BALBIANI RING PROTEIN 3.
SQ SEQUENCE 1700 AA; 186145 MW; 34202B28521B0815 CRC64;

Query Match          9.2%; Score 181.5; DB 1; Length 1700;
Best Local Similarity 19.9%; Pred. No. 1.5e-06;
Matches 68; Conservative 43; Mismatches 105; Indels 125; Gaps 15;

QY 109 TQCSPRETCVEVASELGKSTNTFFKPPCVNVFR-----CGGCCNEESLICMNTSTVSK 163
Db 1073 TKGSDKQKFTESKCEGCEQTQ-----QCKDGRFWSNLNLCGLCDDKK--CP-----GK 1119

QY 164 QLFSEISVPLTSVPVLPVKNH-----TGCKCLPTAPRHPYSIIR-----SIQI 209
Db 1120 QVEDKNTFCQCKCPNQKPDGTCGNKDFCPDLCCKCKNPNRANGCTGVQEWNEEKQCEC 1179

QY 210 PEE-----DRCSSKSL-----CPIDML 227
Db 1180 PKDKPKKQCPGGDWNHQCQCPTPAPTCSNNQKYSNVSCGCGNPGRKNGCPGNQI 1239

QY 228 WDSNKKCKVQEE--ENP-----LAGTEDH 249
Db 1240 WCDNTCRVCVPKNEKPADNCKTKWNDEMCCQCVKPCGEGCKGYMKWNANTCSECP 1299

QY 250 SHLQEPALCGPHMFMDEDCRCYCKTP-----CPKDLIQHPKNCSCFECKESLETCCQKH 304
Db 1300 ADRAKPAASCGDKSKSNDSDSCCKSKMPGCGGPPNQWNEKDC---ECKSATGNCPCAG 1356

QY 305 KLFPDPTCSCEDRCPFHTRPCASGKTACAKHCR--FPKEKR 343
Db 1357 QTWNSQTCCS--CP-ATGKCTGAQVWCSSKACKVCVPAQKK 1394

RESULT 10
VEGB_MOUSE
ID VEGB_MOUSE STANDARD; PRT; 188 AA.
AC P49766;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR B PRECURSOR (VEGF-B) (VASCULAR
ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRF).
GN VEGFB OR VRF.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
RN [1]
SEQUENCE FROM N.A.
RC TISSUE=HEART;
RX MEDLINE; 96197355.
RA Olofsson B., Pajusola K., Kaipainen A., von Euler G., Joukov V.,
RA Saksela O., Orpana A., Pettersson R.F., Alitalo K., Eriksson U.;
RT "Vascular endothelial growth factor B, a novel growth factor for
endothelial cells.";
RL Proc. Natl. Acad. Sci. U.S.A. 93:2576-2581(1996).
RN [2]
SEQUENCE FROM N.A.
RC TISSUE=BRAIN;
RX MEDLINE; 96183052.
RA Townson S., Lagercrantz J., Grimmond S., Silins G.,
RA Nordenskjold M., Weber G., Hayward N.K.;
RT "Characterization of the murine VEGF-related factor gene.";
RL Biochem. Biophys. Res. Commun. 220:922-928(1996).
CC -1- FUNCTION: GROWTH FACTOR FOR ENDOTHELIAL CELLS. BINDS HEPARIN.
CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED. CAN ALSO FORM HETERODIMER
WITH VEGF.
CC -----
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CC -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN.
CC -!- TISSUE SPECIFICITY: ABUNDANTLY EXPRESSED IN HEART, BRAIN, KIDNEY
CC AND SKELETAL MUSCLE.
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; U48800; AAB06273.1; -.
DR EMBL; U43837; AAC52553.1; -.
DR HSSP; P15692; 2VGH.
DR MGD; MGI:106199; VEGFB.
DR PROSITE; PS00249; PDGF; 1.
DR PFAM; PF00341; PDGF; 1.
KW Mitogen; Growth factor; Signal; Heparin-binding.
FT SIGNAL 1 21 POTENTIAL.
FT CHAIN 22 188 VASCULAR ENDOTHELIAL GROWTH FACTOR B.
SQ SEQUENCE 188 AA; 21442 MW; DS2A055FB99SE9CA CRC64;

Query Match 9.0%; Score 176.5; DB 1; Length 188;
Best Local Similarity 23.3%; Pred No. 3.8e-07;
Matches 49; Conservative 22; Mismatches 70; Indels 69; Gaps 7;

QY 106 WQRTQCSPRETCVEVASELGKSTNTFFKPPCVNVFRGCGCCNEESLICMNTSTYSIKQL 165
DB 42 YARATCQPREVVVPLSMELMGNVVKQVPSCTVQRCGCCPDGECVPTGQHQRVMOI 101
QY 166 FEISVPLTSVPELVPKVANHGTCKCLPAPRHPYSIIRSIQIPEEDRCSHSKLCPLD 225
DB 102 LMIQTPSSQLGEM---SLEHSQCECRPKK-----KSAVKPDSPRI-----LCP-- 144
QY 226 MLWDSNKKCKVLQENPLAGTETHSHLQEPALCGPHMFEDRCEVCVKTPCKDLIQHP 285
DB 144 -----PCTQRQR-----DP 154
QY 286 KNCSCFECKESLETCCQKHL-FHPDTCSC 314
DB 155 RTCRC-RCRRRRFLHCQGRGLELNPDTCRC 183

RESULT 11
VEGB_HUMAN
ID VEGF_HUMAN STANDARD; PRT; 188 AA.
AC P49765;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR B PRECURSOR (VEGF-B) (VEGF RELATED
DE FACTOR).
GN VEGFB OR VRF.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Primates; Catarrhini; Hominidae; Homo.
RN [1]
RP MEDLINE; 96197355.
RA Olofsson B., Pajusola K., Kaipainen A., von Euler G., Joukov V.,
RA Saksela O., Orpana A., Pettersson R.F., Alitalo K., Eriksson U.;
RT "Vascular endothelial growth factor B, a novel growth factor for
RT endothelial cells."
RL Proc. Natl. Acad. Sci. U.S.A. 93:2576-2581(1996).
RN [2]
RP SEQUENCE FROM N.A.
RP MEDLINE; 97077124.
RX Grimmond S., Lagercrantz J., Drinkwater C., Silins G., Townson S.,
RA Pollock P., Gotley D., Carlson E., Rakar S., Nordenskjold M., Ward L.,

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RA Hayward N., Weber G.;
RT "Cloning and characterization of a novel human gene related to
RT vascular endothelial growth factor.";
RL Genome Res. 6:124-131(1996).
CC -!- FUNCTION: GROWTH FACTOR FOR ENDOTHELIAL CELLS. BINDS HEPARIN.
CC -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED. CAN ALSO FORM HETERODIMER
CC WITH VEGF.
CC -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN.
CC -!- TISSUE SPECIFICITY: EXPRESSED IN ALL TISSUES EXCEPT LIVER.
CC HIGHEST LEVELS FOUND IN HEART, SKELETAL MUSCLE AND PANCREAS.
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; U48801; AAB06274.1; -.
DR EMBL; U43369; AAA91463.1; -.
DR HSSP; P15692; 1VFF.
DR MIM; MIM:601398; -.
DR PROSITE; PS00249; PDGF; 1.
DR PFAM; PF00341; PDGF; 1.
KW Mitogen; Growth factor; Signal; Heparin-binding.
FT SIGNAL 1 21 POTENTIAL.
FT CHAIN 22 188 VASCULAR ENDOTHELIAL GROWTH FACTOR B.
SQ SEQUENCE 188 AA; 21261 MW; F04654D5A3727194 CRC64;

Query Match 8.9%; Score 175.5; DB 1; Length 188;
Best Local Similarity 24.0%; Pred No. 4.6e-07;
Matches 52; Conservative 23; Mismatches 73; Indels 69; Gaps 8;

QY 100 KVID--EWMQRTQCSPRETCVEVASELGKSTNTFFKPPCVNVFRGCGCCNEESLICMNTS 157
DB 34 KVVSWIDVTVTRATCQPREVVVPLTVELMGTVAKQLVPSCTVQRCGCCPDGECVPTG 93
QY 158 TSYISKQLFEISVPLTSVPELVPKVANHGTCKCLPAPRHPYSIIRSIQIPEEDRCSH 217
DB 94 QHOVRMQILMIRYPSQLGEM---SLEHSQCECRPKK-----KSAVKPDSPR--- 140
QY 218 SKKLCPLDMLWDSNKKCKVLQENPLAGTETHSHLQEPALCGPHMFEDRCEVCVKTPC 277
DB 140 ---PLCP-----RCT-----QHHQRP-----DPRTCRCRCR--- 163
QY 278 PKDLIQHPKNCSCFECKESLETCCQKHLFHPDTCSC 314
DB 163 -----RRSFLRCQGRGLELNPDTCRC 183

RESULT 12
VEGF_SHEEP
ID VEGF_SHEEP STANDARD; PRT; 146 AA.
AC P50412;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE PERMEABILITY FACTOR) (VPF).
GN VEGF.
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; Bovidae;
OC Caprinae; Ovis.
RN [1]
RP SEQUENCE FROM N.A.
RP MEDLINE; 97117958.
RX Redmer D.A., Dal Y., Li J., Charnock-Jones D.S., Smith S.K.,

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RA Reynolds L.P., Moor R.M.;  
RT "Characterization and expression of vascular endothelial growth  
factor (VEGF) in the ovine corpus luteum";  
RL J. Reprod. Fertil. 108:157-165(1996).  
CC -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL  
CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR  
PERMEABILITY.  
CC -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.  
CC -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR  
TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY  
SIMILARITY).  
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.  
CC  
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CC  
CC EMBL; X89506; CAA61677.1; --  
DR HSP; P15692; IVPF.  
DR PROSITE; PS00249; PDGF; 1.  
DR PFAM; PF00341; PDGF; 1.  
KW Mitogen; Growth factor; Glycoprotein; Signal.  
FT SIGNAL 1 26 BY SIMILARITY.  
FT CHAIN 27 146 VASCULAR ENDOTHELIAL GROWTH FACTOR.  
FT DISULFID 51 93 BY SIMILARITY.  
FT DISULFID 82 127 BY SIMILARITY.  
FT DISULFID 86 129 BY SIMILARITY.  
FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).  
FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).  
FT CARBOHYD 100 100 POTENTIAL.  
SQ SEQUENCE 146 AA; 17247 MW; 4E792CB557F91760 CRC64;  
  
Query Match 8.5%; Score 167.5; DB 1; Length 146;  
Best Local Similarity 38.1%; Pred. No. 1.5e-06;  
Matches 37; Conservative 14; Mismatches 43; Indels 3; Gaps 3;  
  
QY 97 ETLKVIDEWMQTCSPRETCEVASELKGSTNTFFKPPCVNFRGCGCNEESLICMNT 156  
Db EVKMFND-VYQSFRCPIETLVDFQYDPDEIFKPCVPLMRGCGCNDSELCVPT 96  
QY 157 STSVISKQFEISVPLTSVPELVKPVKVNHTGCKLP 193  
Db EEFNITMQIMRIK-PHQ-S-QHIGEMSPLOHNGCECRP 131  
  
RESULT 13  
VEGH\_ORFN7  
ID VEGH\_ORFN7 STANDARD; PRT; 148 AA.  
AC P52585;  
DT 01-OCT-1996 (Rel. 34, Created)  
DT 01-OCT-1996 (Rel. 34, Last sequence update)  
DT 15-JUL-1999 (Rel. 38, Last annotation update)  
DE VASCULAR ENDOTHELIAL GROWTH FACTOR HOMOLOG PRECURSOR.  
GN A2R.  
OS Orf virus (strain NZ7) (OV NZ-7).  
OC Viruses; dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;  
OC Parapoxvirus.  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE; 94076465.  
RA Lytle D.J., Fraser K.M., Fleming S.B., Mercer A.A., Robinson A.J.;  
RT "Homologs of vascular endothelial growth factor are encoded by the  
poxvirus orf virus".  
RL J. Virol. 68:84-92(1994).  
CC -!- FUNCTION: INDUCES ENDOTHELIAL PROLIFERATION.  
CC -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED (BY SIMILARITY).  
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.  
CC

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CC  
CC EMBL; S67522; AAB29223.1; --  
DR HSP; P15692; IVPF.  
DR PROSITE; PS00249; PDGF; FALSE\_NEG.  
DR PFAM; PF00341; PDGF; 1.  
KW Mitogen; Growth factor; Glycoprotein; Signal.  
FT SIGNAL 1 ? POTENTIAL.  
FT CHAIN ? 148 VASCULAR ENDOTHELIAL GROWTH FACTOR  
FT DISULFID 46 88 BY SIMILARITY.  
FT DISULFID 77 130 BY SIMILARITY.  
FT DISULFID 81 132 BY SIMILARITY.  
FT DISULFID 71 71 INTERCHAIN (BY SIMILARITY).  
FT DISULFID 80 80 INTERCHAIN (BY SIMILARITY).  
FT CARBOHYD 95 95 POTENTIAL.  
SQ SEQUENCE 148 AA; 16078 MW; F0E13BA104CC73F8 CRC64;  
  
Query Match 8.4%; Score 164; DB 1; Length 148;  
Best Local Similarity 32.8%; Pred. No. 2.8e-06;  
Matches 38; Conservative 12; Mismatches 40; Indels 26; Gaps 4;  
  
QY 105 EWORT----QCSPRETCVEVASELKGSTNTFFKPPCVNFRGCGCNEESLICMNTSTSY 160  
Db DWRTLDKSCCKPRDVIWYLGEEYPESTNLYNPRCVTVKRCGCCNGDQICITAVETRN 95  
QY 161 ISKQFEISVPLTSV-----PELVKPVKVNHTGCKCL-----PTAPRHP 199  
Db TT-----VTVSVTVGSSSGTNSGVSTNLQRLSVISVTEHTKDCIGRTTTTPTTREP 146  
  
RESULT 14  
PDGB\_FELCA  
ID PDGB\_FELCA STANDARD; PRT; 245 AA.  
AC P12919;  
DT 01-OCT-1989 (Rel. 12, Created)  
DT 01-OCT-1989 (Rel. 12, Last sequence update)  
DT 01-NOV-1997 (Rel. 35, Last annotation update)  
DE PLATELET-DERIVED GROWTH FACTOR, B CHAIN PRECURSOR (PDGF B-CHAIN)  
DE (PDGFB) (PDGF-2).  
GN PDGFB OR C-SIS.  
OS Fells silvestris catus (Cat).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
OC Eutheria; Carnivora; Fissipedia; Felidae; Fells.  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE; 87146463.  
RA van den Ouweland A.M.W., van Groningen J.J.M., Schalken J.A.,  
RA van Neck H.W., Bloemers H.P.J., van de Ven W.J.M.;  
RT "Genetic organization of the c-sis transcription unit".  
RL Nucleic Acids Res. 15:959-970(1987).  
RN [2]  
RP REVISIONS.  
RA van den Ouweland A.M.W.;  
RL Submitted (NOV-1996) to the EMBL/GenBank/DBJ databases.  
CC -!- FUNCTION: PLATELET-DERIVED GROWTH FACTOR IS A POTENT MITOGEN FOR  
CELLS OF MESENCHYMAL ORIGIN. BINDING OF THIS GROWTH FACTOR TO ITS  
AFFINITY RECEPTOR ELICITS A VARIETY OF CELLULAR RESPONSES. IT IS  
RELEASED BY PLATELETS UPON WOUNDING AND PLAYS AN IMPORTANT ROLE  
IN STIMULATING ADJACENT CELLS TO GROW AND THEREBY HEAL THE WOUND.  
CC -!- SUBUNIT: ANTIPARALLEL DISULFIDE-LINKED DIMER OF NONIDENTICAL (A  
AND B) CHAINS. HOMODIMERS OF A AND B CHAINS ARE IMPLICATED IN  
TRANSFORMATION PROCESSES.  
CC -!- MISCELLANEOUS: A-A AND B-B, AS WELL AS A-B, DIMERS CAN BIND TO THE  
PDGF RECEPTOR.  
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.  
CC

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CC -----
DR EMBL; X05112; CAA28758.1; ALT_SEQ.
DR PIR; A26402; TVCHSS.
DR HSP; P01127; IPDG.
DR PRINTS; PR00438; GFCYSKNOT.
DR PROSITE; PS00249; PDGF; 1.
DR PFAM; PF00341; PDGF; 1.
KW Mitogen; Growth factor; Proto-oncogene; Platelet; Signal.
FT SIGNAL 1 20
FT PROPEP 21 81
FT CHAIN 82 194
FT PROPEP 195 245
FT DISULFID 101 145
FT DISULFID 134 182
FT DISULFID 138 184
FT DISULFID 128 128
FT DISULFID 137 137
SQ SEQUENCE 245 AA; 27787 MW; E7715291D9837512 CRC64;

Query Match      8.2%; Score 161; DB 1; Length 245;
Best Local Similarity 29.9%; Pred. No. 7.9e-06;
Matches 67; Conservative 24; Mismatches 103; Indels 30; Gaps 10;

QY 1 MYREVVVVVWML--YVOLVGSSNEHGPVKRRSQSTLERSEQQIRAASSLEELLRIH 58
Db 1 MRCWA---LFLSLCYLRLV---SAEGDPIPEELYKML--SDHSIR---SFDLQRLUH 49

QY 59 SEDKILWRCRLRLKSFST-----MDSRSASHRSTRFAATFYDIETLKVIDEEWQRTQCSF 113
Db 50 GDSVDEADRAELDLNSTRSHCGGELESLSRGSRSGAAGSPVAEPAMIAE-----CKT 103

QY 114 RETCVFVASELKGSTWTFK--PPCVNVRFCGCCNEESLICMNTSTSVISKQLFEIS-V 170
Db 104 RTEVFVSRRLDRTNANFLNPPCPVEVQRCGCCNNRNVQCRPTQVQLRLVQVRKIETV 163

QY 171 PLTSPVPELVKVNHTGCKLPTAPRHPHYSIIRRSIQIPEDR 214
Db 164 RKRPFVKATVTLEHDLACKCFETVAARP---VTRSPGSSQEQR 204

RESULT 15
PLGF_HUMAN
ID PLGF_HUMAN STANDARD; PRT; 170 AA.
AC P49763;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 15-JUL-1999 (Rel. 38, Last annotation update)
DE PLACENTA GROWTH FACTOR PRECURSOR (PLGF-1/PLGF-2).
GN PGF OR PLGF.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Primates; Catarrhini; Hominidae; Homo.
RN [1]
RP SEQUENCE FROM N.A. (PLGF-1).
RC TISSUE=PLACENTA;
RX MEDLINE; 92021031.
RA Maglione D., Guerriero G., Viglietto G., Delli-Bovi P., Persico M.G.;
RT "Isolation of a human placenta cDNA coding for a protein related to
RT the vascular permeability factor.";
RL Proc. Natl. Acad. Sci. U.S.A. 88:9267-9271(1991).
RN [2]
RP SEQUENCE FROM N.A. (PLGF-2).
RC TISSUE=PLACENTA;
RX MEDLINE; 94198032.

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RA Hauser S., Welch H.A.;
RT "A heparin-binding form of placenta growth factor (PLGF-2) is
RT expressed in human umbilical vein endothelial cells and in
RT placenta";
RL Growth Factors 9:259-268(1993).
RN [3]
RP SEQUENCE FROM N.A. (PLGF-2).
RX MEDLINE; 93205407.
RA Maglione D., Guerriero V., Viglietto G., Ferraro M.G., Aprelikova O.,
RA Alitalo K., del Vecchio S., Lei K.-J., Chou J.Y., Persico M.G.;
RT "Two alternative mRNAs coding for the angiogenic factor, placenta
RT growth factor (PLGF), are transcribed from a single gene of
RT chromosome 14.";
RN Chromosome 14.;
RL Oncogene 8:925-931(1993).
RN [4]
RP CHARACTERIZATION AND SEQUENCE OF 19-24.
RX MEDLINE; 95014370.
RA Park J.E., Chen H.H., Miner J., Houck K.A., Ferrara N.;
RT "Placenta growth factor. Potentiation of vascular endothelial growth
RT factor bioactivity, in vitro and in vivo, and high affinity binding
RT to Flt-1 but not to Flk-1/KDR.";
RL J. Biol. Chem. 269:25646-25654(1994).
CC -!- FUNCTION: GROWTH FACTOR OF UNKNOWN FUNCTION. IT BINDS TO FMS-LIKE
CC TYROSINE KINASE (FLT-1) AND THE LONGER FORM (PLGF-2) CAN ALSO
CC BIND HEPARIN. IT IS ABLE TO POTENTIATE THE ACTION OF LOW LEVELS OF
CC VEGF.
CC -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
CC -!- SUBCELLULAR LOCATION: BOTH FORMS ARE SECRETED BUT THE LONGER FORM
CC APPEARS TO REMAIN CELL ATTACHED UNLESS RELEASED BY HEPARIN.
CC -!- ALTERNATIVE PRODUCTS: TWO FORMS; PLGF-1 AND PLGF-2 (SHOWN HERE);
CC ARE PRODUCED BY ALTERNATIVE SPLICING. PLGF-1 DIFFERS FROM PLGF-2
CC IN LACKING A 21 RESIDUES SEGMENT IN THE C-TERMINAL SECTION WHICH
CC ACTS AS A CELL RETENTION SIGNAL.
CC -!- TISSUE SPECIFICITY: WHILE BOTH FORMS ARE PRESENT IN MOST PLACENTA
CC TISSUES, THE LONGER FORM IS SPECIFIC TO EARLY (8 WEEK) PLACENTA
CC AND ONLY THE SHORTER FORM IS FOUND IN THE COLON AND MAMMARY
CC CARCINOMAS.
CC -!- PTM: N-GLYCOSYLATED.
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; X54936; CAA38698.1; -.
DR EMBL; A18411; CAA01393.1; -.
DR EMBL; S72960; AAB30462.1; -.
DR HSP; P15692; 1VPF.
DR MIM; 601121; -.
DR PROSITE; PS00249; PDGF; 1.
DR PFAM; PF00341; PDGF; 1.
KW Mitogen; Growth factor; Glycoprotein; Signal; Alternative splicing;
KW Heparin-binding.
FT SIGNAL 1 18
FT CHAIN 19 170
FT DISULFID 52 94
FT DISULFID 83 128
FT DISULFID 87 130
FT DISULFID 77 77
FT DISULFID 86 86
FT CARBOHYD 33 33
FT CARBOHYD 101 101
FT VARSPLIT 142 162
FT CONFLICT 91 91
SQ SEQUENCE 170 AA; 19325 MW; E47639AC59C0963F CRC64;

Query Match      8.1%; Score 159.5; DB 1; Length 170;
Best Local Similarity 28.3%; Pred. No. 7.1e-06;

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GenCore version 4.5  
Copyright (c) 1993 - 2000 CompuGen Ltd.

OM nucleic - nucleic search, using sw model

Run on: May 16, 2000, 12:04:38 ; Search time 69.55 Seconds  
(without alignments)  
7208.985 Million cell updates/sec

Title: US-09-214-982-2  
Perfect score: 2004  
Sequence: 1 ccagcttctgtarctgttaa.....aaacaccattattcaagtct 2004

Scoring table: IDENTITY\_NUC  
Gapop 10.0 , Gapext 1.0

Searched: 311585 seqs, 125096042 residues

Total number of hits satisfying chosen parameters: 623170

Minimum DB seq length: 0  
Maximum DB seq length: 1000000

Post-processing: Minimum Match 0%  
Listing first 45 summaries

Database : N\_Geneseq\_36.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	2002.8	99.9	2004	1 V15156	Human vascular end
2	1998.6	99.7	2029	1 V20807	Homo sapiens vascu
3	1817.8	90.7	1864	1 T62961	Human c-Fos induce
4	1070.8	53.4	2846	1 V20806	Homo sapiens vascu
5	1065.6	53.2	1107	1 V32823	Human zvegf2 growt
6	977	48.8	1890	1 T62960	Murine c-Fos induc
7	877.2	43.8	1581	1 V15177	Mouse vascular end
8	874.8	43.7	1325	1 V20808	Mus musculus vascu
9	806.6	40.2	1491	1 V15178	Rat vascular endot
10	796.4	39.7	1135	1 V20809	Mus musculus vascu
11	137.6	6.9	1836	1 T84277	Mouse Flt4 recepto
12	137.6	6.9	1836	1 V52577	Mouse vascular end
13	134	6.7	1741	1 T84300	Quail Flt4 recepto
14	134	6.7	1741	1 V52578	Human vascular end
15	129	6.4	1674	1 T51371	Human vascular end
16	129	6.4	1997	1 T84276	Human Flt4 recepto
17	129	6.4	1997	1 V52576	Human vascular end
18	129	6.4	2031	1 T59929	Human vascular end
19	129	6.4	2321	1 T68811	Human foetal liver
20	125.8	6.3	1525	1 T03950	DNA encoding vascu
21	64	3.2	299	1 T59930	EST HSC1WF11.1. Hum
22	54.8	2.7	366	1 O49601	Human VEGF-121 cod
23	54.8	2.7	498	1 O44260	Human VEGF-165 cod
24	53.2	2.7	366	1 Q11099	Human vascular end
25	53.2	2.7	456	1 T17740	VEGF121 Cys+2 codi
26	53.2	2.7	467	1 T17739	VEGF121 Cys+4 codi
27	53.2	2.7	473	1 O99080	CDNA encoding huma
28	53.2	2.7	473	1 T17613	VEGF121 coding seq
29	53.2	2.7	498	1 Q10797	Human vascular end
30	53.2	2.7	516	1 V28396	Vascular endotheli
31	53.2	2.7	576	1 T95839	DNA for vascular e
32	53.2	2.7	576	1 T17747	VEGF165 Cys+4 codi
33	53.2	2.7	599	1 T17748	VEGF165 Cys+2 codi
34	53.2	2.7	605	1 Q99081	CDNA encoding huma

ALIGNMENTS

RESULT 1

V15156	53.2	2.7	605	1	T17614	VEGF165 coding seq
ID	53.2	2.7	649	1	T33609	Vascular endotheli
AC	53.2	2.7	677	1	O99082	CDNA encoding huma
DT	53.2	2.7	677	1	T17615	VEGF189 coding seq
DE	53.2	2.7	728	1	O99083	CDNA encoding huma
KW	53.2	2.7	728	1	T17616	VEGF206 coding seq
KW	53.2	2.7	774	1	T10120	Vascular endotheli
OS	53.2	2.7	774	1	T79139	Human vascular end
FH	53.2	2.7	774	1	T85644	Antisense inhibito
FT	53.2	2.7	774	1	T95393	Human vascular end
FT	53.2	2.7	774	1	V15102	Human vascular end
PN	W09802543-A1.					
PD	22-JAN-1998.					
PF	15-JUL-1997; J02456.					
PR	15-JUL-1996; JP-185216.					
PA	(CHUG-) CHUGAI RES INST MOLECULAR MEDICINE INC.					
PI	Hirata Y, Nezu J;					
DR	P-PSDB; W44293.					
PT	VEGF-D protein encoded by DNA - useful for, e.g. gene therapy and treating oedema					
PS	Claim 2; Page 21-24; 52pp; Japanese.					
CC	The present sequence encodes human vascular endothelial growth factor D (VEGF-D). The VEGF-D protein, compounds and antibodies, which can bind the protein, may be useful in, e.g. gene therapy and in treatment of inflammation and oedema. Vectors, containing the VEGF-D DNA, and VEGF-D DNA sequences may be used for screening for the compounds which bind to the VEGF-D protein.					
SQ	Sequence 2004 BP; 551 A; 441 C; 430 G; 579 T;					

Query Match 99.9%; Score 2002.8; DB 1; Length 2004;  
Best Local Similarity 100.0%; Pred. No. 0;  
Matches 2004; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY	1	ccagcttctgtarctgttaagcattgtgcccacaccctctctacaagcaactagaa	60
DB	1	CCAGCTTTCTGTARCTGTAGCACTTGTGGCCACACACCTCTCTTCAAGCAACTAGAA	60
QY	61	cctgcggcctacattggagagattttttaattttctggacaygaagtaaattagagtt	120
DB	61	CCTGCGGCATACATTGGAGAGATTTTTTAATTTCTGGACAYGAAGTAAATTAGAGTG	120
QY	121	ctttcyaatttcaggtagaagacatgtccacctctcgtattattttggagaacatttga	180
DB	121	CTTTTCYAATTTTCAGGTAGAGACATGTCCACCTCTCTGATTATTTTGGAGAACATTTGA	180
QY	181	ttttttcattctctctcccacccctcctgaattgtgcaaaaaaacgtaaccttgctaa	240
DB	181	TTTTTTTCACTCTCTCTCCCACTTGAATGTGCAAAAAAGCGTACCTTGCTCTAA	240
QY	241	ttgaaataatttcattggattttgatcagaactgatcattgttttctgtgtgaagttt	300
DB	241	TTGAATAATTTTCATTGGATTTTGATCAGAACTGATCAATTTGGTTTCTGTGTGAAGTTT	300

QY 301 tggaggtttcaaaactttcttccttggaagatgccttttgaacaaatctttctctagctgcctg 360  
Db 301 TGAGGTTTCAAACACTTCCCTTCCTGGAGAATGCCTTTTGAACAATTTCTCTAGCTGCCTG 360  
QY 361 atgtcaactgcttagtaatacagtgatattgaaatattcaaaatgtacagagagtggtga 420  
Db 361 ATGTCAACTTGCCTTAGTAATCAGTGGATATTGAAATATTCAAAATGTACAGAGAGTGGGTA 420  
QY 421 ggggtgaatgttttaatatgtgttacgtccagctgggtgcagggctccagtaataaact 480  
Db 421 GTGGTGAATGTTTTCATGAATGTGTACGTCCAGCTGGTGCAGGGCTCCAGTAATGAACAT 480  
QY 481 ggaccagtgaaagcatcatctcagtcacattggaacgatctgaaacagcagatcagggct 540  
Db 481 GGACAGTGAAGGGATCATCTCAGTCCACATTTGGAACGATCTGAACAGCAGATCAGGGCT 540  
QY 541 gcttcagtttgaggaaactacttcgaaatctactcactctggaagctggaagctgtggaga 600  
Db 541 GCTTCTAGTTTGGAGAACTACTTCGAATTTACTCACTCTGAGGACTGGAAGCTGTGGAGA 600  
QY 601 tgcagctgagctcaaaagttttaccagatggactctgcctcagcatcccatcggtcc 660  
Db 601 TGCAGCTGAGGCTCAAAAGTTTTACCAGTATGGACTCTCGCTCAGCATCCCATCGGTCC 660  
QY 661 actaggtttgcgcaactttctatgacattgaaacactaaagtttatagatgaagaatgg 720  
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QY 781 agtaccacacattctcaagcccttgtgtgaacgtgttcagatgttgctgtgttc 840  
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QY 841 aatgaagagagccttatctgtatgaacacagcacctcgtacatttccaaacagctcttt 900  
Db 841 AATGAAGAGAGCCTTATCTGTATGAACACAGCACCTCTGTACATTTCCAAACAGCTCTTT 900  
QY 901 gagatacagtgctttgacatcagtcactcgaattagtcctgtttaaagttgccaatcat 960  
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QY 1021 atccagatccctgaagaagatcgctgttcccatcccaagaactctgtcctattgacatg 1080  
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QY 1081 ctatgggtagacaacaaatgttaaatgtgttttgagagaggaataaccactctggaaca 1140  
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QY 1141 gaagaccactctcatctcagaaacacagctctctgtggccacacatgatgtttacaaa 1200  
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QY 1321 ttaccaccagacacctgcagctgtgaggaagatgcccttttcataccagacatgtgca 1380  
Db 1321 TTTACCCAGACACCTGCGAGCTGTGAGGACAGATGCCCTTTTCATACACAGCATGTGCA 1380  
QY 1381 agtggcaaacacagcatgtgcaaaagcatgtccgcttttccaaaggagaaaagggtgccag 1440

Db 1381 AGTGGCAAAACAGCATGTGCAAAAGCATTTGCCGCTTTTCCAAAAGSAGAAAGGCGTCCCCAG 1440  
QY 1441 gggcccccacagccgaaagaactccttgattcagcgttccaagttcccatccctcctgcattt 1500  
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QY 1501 ttaacagcatgctgtcttgccaaagttgctgcactgtttttttcccaagtggttaaaaaaa 1560  
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QY 1561 aaatccattttacacagcaccacagtgaaatccacagaccacacettccatccaccgctaa 1620  
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Db 1621 GGAGTCCCTGGTTCATTTGATGATGCTCTTCTAGCTGCAGATGCCCTCTGCCACCAAGGAA 1680  
QY 1681 tggagaggggggacccatgtaactcctttttagttttttagtttttttttttttttttttt 1740  
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QY 1741 gagaaggtgtgctggttcagtgaaatggcaggtgtcatatgactgacttactcagacagat 1800  
Db 1741 GAGAAGGTGTGCTGTCATGGAATGGCAGGTGTCTATGACTGATTACTCAGACAGAT 1800  
QY 1801 gaggaactcagtcctcctgagtccttctgtaactcgaactcctgtgaattattctgatt 1860  
Db 1801 GAGGAAAACTGTAGTCTCTGAGTCTCTTGTCTAATCGCAACTCTTGTGAATTTATCTGATT 1860  
QY 1861 cttttttatgcagaatttgattcgtatgatcagtagctgacttctgattactgctcagct 1920  
Db 1861 CTTTTTATGACAGATTTGATTGCTGATGATCAGTACTGACTTCTTGATTACTGTCAGCT 1920  
QY 1921 tatagttccagtttaatagaactaccatcctgattgttctaatatttaagtgtatttaaga 1980  
Db 1921 TATAGTCTTCCAGTTTAATGAACCTACCATCTGATCTTCATATTAAAGTGTATTTAAAGA 1980  
QY 1981 aaataaaacacattattcaagtct 2004  
Db 1981 AAATAAACACCATTTATTCAAGTCT 2004

RESULT 2  
V20807  
ID V20807 standard; cDNA; 2029 BP.  
AC V20807;  
DE Homo sapiens vascular endothelial growth factor D (VEGF-D) gene.  
KW vascular endothelial growth factor; VEGF-D; angiogenesis;  
KW modification; acceleration; wound healing; tissue; organ;  
KW transplants; collateral circulation; infarction; arterial stenosis;  
KW coronary artery disease; inhibition; cancer; treatment;  
KW diabetic retinopathy; lung disorders; blood circulation;  
KW gaseous exchange; chronic obstructive airway disease;  
KW intestinal malabsorptive syndrome; biopsy; metastatic risk;  
KW detection; diagnosis; congestive heart failure; ss.  
OS Homo sapiens.  
FH Key Location/Qualifiers  
FT CDS 411..1475  
FT FT /\*tag= a  
FT FT /product= VEGF-D  
FT FT /note= "isolated from lung tissue"

W09807832-AL...  
PN 26-FEB-1998.  
PD 21-AUG-1997; U14696.  
PR 01-JUL-1997; US-051426.  
PR 23-AUG-1996; AU-001825.  
PR 23-AUG-1996; US-023751.  
PR 11-NOV-1996; AU-003554.  
PR 14-NOV-1996; US-031097.  
PR 05-FEB-1997; AU-004954.











Qy	763	gcaagtga	ctgggg	aaagag	tacc	aaac	atctt	ccaagcccc	cttgtg	gaacgtgttc	822	
Db	367	gccagtga	ctgggg	aaagag	tacc	aaac	atctt	ccaagcccc	cttgtgtg	gaacgtgttc	426	
Qy	823	cgatgtgt	gctgtt	gcaatga	agagac	cttatct	atga	accagcac	ctcgatc		882	
Db	427	cgatgtgt	ggcctgtt	gcaatga	agagac	cttatct	atga	accagcac	ctcgatc		486	
Qy	883	atttccaaa	cagctctt	tggagata	tcag	tgccttt	ggacat	caglac	ctgaattag	tgcct	942	
Db	487	atttccaaa	cagctctt	tggagata	tcag	tgccttt	ggacat	caglac	ctgaattag	tgcct	546	
Qy	943	gttaaatgt	ccaatc	atacat	acaggtt	gaagtgt	ctggc	aaacagcccc	cccatcc	atac	1002	
Db	547	gtttaaagt	tgccaa	tcat	acaggtt	gttaagt	gctttg	ccaacagcccc	cccatcc	atac	606	
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Qy	1063	ctctgtc	ctattg	acatgt	ctatgg	atagca	acaatgt	aaatgtgtt	tgtgc	agagagaa	1122	
Db	667	ctctgtc	ctattg	acatgt	ctatgg	atagca	acaatgt	aaatgtgtt	tgtgc	agagagaa	726	
Qy	1123	aatccact	gtctg	aaacaga	agaccact	ctcatct	cccagg	aaccag	gtctctgt	tgggcca	1182	
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Db	787	cacatgat	tttgac	caaga	atcgttgc	gagtg	tgtctgt	taaaacac	catgtccc	aaagat	846	
Qy	1243	ctaatacc	agacac	ccccaaaa	aactgc	agttgt	cttggat	gcaaaaga	agtcctg	gagac	ctgc	1302
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Qy	1363	cataccag	accatgt	ccaagt	ggcaaa	acagcat	gtg	caaaag	cattg	ccgc	ttttccaaag	1422
Db	967	cataccag	accatgt	ccaagt	ggcaaa	acagcat	gtg	caaaag	cattg	ccgc	ttttccaaag	1026
Qy	1423	gagaaa	gggctgcc	cagg	ggggcccc	acagcc	ggaa	agaatc	ctttgatt	aaag	1474	

## RESULT 6

T62960	T62960 standard; DNA; 1890 BP.
1B	AC T62960;
DT	05-JUL-1997 (first entry)
DE	Murine c-Fos induced growth factor gene F0401.
KW	c-Fos induced growth factor; FGF; Fos regulated gene;
KW	proto-oncogene; lung disorder; pneumonia; pneumoconiosis;
KW	gene therapy; antisense; ribozyme; cancer; proliferative disorder;
KW	transgenic animal; ss.
OS	Mus sp.
FH	Key
FT	cds
FT	Location/Qualifiers
PN	283..1359
PN	/*tag= a
PD	W09712972-A2.
PD	10-APR-1997.
PF	30-SEP-1996; IB1113.
PR	29-SEP-1995; GB-019928.
PR	13-JUN-1996; GB-012368.
PA	(UYSI-) UNIV SIENA.
PI	Oliviero S.
DR	WPI; 97-226216/20.
DR	P-ESDB; W14992.
PT	Nucleotide molecule encoding c-Fos induced growth factor protein -





```
Qy 607 ctgagggctcaaaagtattaccagtagtgactctgctcagcatccatcgggtccactagg 666
Db 301 TTGAAGCTCAAAAGTCTTGCCAGTATGACTCACGCTCAGCATCCCTCGCTCCACACAGA 360
Qy 667 ttgcggaactttctatgaacattgaacactaaagtatatagatgaagaatggaaga 726
Db 361 TTTGGGCAACTTTCTATGACACTGAAACACTTAAAGTTATAGATGAAGATGGCAGAGG 420
Qy 727 actcagtcagccctagagaacgtgcgtgaggtggcagtgccagtgagtggaagagtagcc 786
Db 421 ACCCAATGAGCCCTAGAGAGACATGCGTAGAAGTGGCCAGTGAGCTGGGAAGACACAC 480
Qy 787 aacacattctcaagcccccctgtgtgaacgtgtcccgatgtggctgtgttgcgaatgaa 846
Db 481 RACACATCTTCAAGCCCCCTGTGTAAATGCTTCGCGTGTGGAGGCTGCTGCAACGAA 540
Qy 847 gagagccttatctatgaacacacgacccctcgtagtattccaaacagctctttgagata 906
Db 541 GAGGCTGTGATGTGATGAACACAAAGCACCTCTACATCTCCAAACAGCTCTTTGAGATA 600
Qy 907 cagtcgcttgacatcagtagcctgaattagtgccctgttaaagttgccaatcagatg 966
Db 601 TCAGTGCCTCTGACATCAGTCCCGAGTTAGTGCCCTGTAAATTTGCCAACCATACGGGT 660
Qy 967 tgaagtgtctgccaacagcccccgccatccatcactcaattatcagaagatccatccag 1026
Db 661 TGTAAGTCTTGCCACGCGGCCCGCCCATCTTACTCAATATATCAGAAGATCCATTACG 720
Qy 1027 atccctgaagaagatcgtgtgttcccatcccaagaacactctgtcctattgacatgctatgg 1086
Db 721 ACCCCAGAGAAGATGAATGCTCATTTCCAGAAGAACTGTGCTCTATTGACATGCTGTGG 780
Qy 1087 gatacaacaagtataatgtgttttcagagagaaataccactgtcgtggaacagaac 1146
Db 781 GATAACACCAATGTAATGTGTTTGAAGACGAGATCCCACTGCCCTGGGACAGAAAGAC 840
Qy 1147 cactctcatctcaggaacccagctctctgtgtggccacacatgatgtttgaagaagatcgt 1206
Db 841 CACTCTTACCTCCAGAACCCCACTCTCTGTGGACCGCACATGACGTTTGATGAAGATCGC 900
Qy 1207 tgcgagtggtctgtataaacaccatgtccccaaagatctaatccagcaccaccccaaaactgc 1266
Db 901 TGTGAGTGCCTGTGTAAGACACATGTCCGGGAGATCTCATTCAGCACCCCGGAAACATGC 960
Qy 1267 agttccttgatgcaagaagctctgagacctctgcagcagctcgcgaagaacacaagctattcac 1326
Db 961 AGTTGCTTTGAGTGCAAGAAAGTCTGGAGAGCTGCTGCCAAAGACACAAGATTTTTCAC 1020
Qy 1327 ccagacacctgcagctgtgagacagatgcccctttctacaccagaccatgtgcaagtggc 1386
Db 1021 CCAGACACCTGCAGCTGTGAGSACAGATGTCTCTTTTCACACCAGAACATGTGCAAGTAGA 1080
Qy 1387 aaaaacacatgtgaaaacattgcgcgtttccaaagggaagaaaggcgtccacaggggccc 1446
Db 1081 RAAGCGCTCTGTGGAAGCACTTGGCGCTTTTCCAAAGSAGACAAAGG---GCCACGGGACTC 1137
Qy 1447 cacagcgaagaatcccttgatctc---gggttccaaagttccccactccctgtcatttt 1502
Db 1138 TACAGCCAGGGAACCCCTTGATTAACCTTCCTTTCAAGTCCCCCCCCTCTCTGTCTATTTA 1197
Qy 1503 aacagcagctgtctttgcaagtgtgctgctcactggt 1538
Db 1198 AACAGCTCACTGCTTGTGCAAGTTGCTGCTACTGTT 1233
```

## RESULT 9

V15178  
ID V15178 standard; cDNA to mRNA; 1491 BP.  
AC V15178;  
DT 22-JUN-1998 (first entry)  
DE Rat vascular endothelial growth factor D encoding cDNA.  
KW Race; vascular endothelial growth factor D; VEGF-D; gene therapy;

```
KW inflammation; oedema; ds.  
OS Rattus sp.  
FH Key Location/Qualifiers  
FT CDS 270..1250  
FT /*tag= a  
FT /product= "VEGF-D"  
PN WO9802543-A1.  
PD 22-JAN-1998.  
PF 15-JUL-1997; J02456.  
PR 15-JUL-1996; JP-185216.  
PA (CHUG-) CHUGAI RES INST MOLECULAR MEDICINE INC.  
PI Hirata Y, Nezu J;  
DR WPI; 98-110591/10.  
DR P-DSDB; W44296.  
PT VEGF-D protein encoded by DNA - useful for, e.g. gene therapy and  
PT treating oedema  
PS Example 8; Page 35-38; 52pp; Japanese.  
CC The present sequence encodes rat vascular endothelial growth factor D  
CC (VEGF-D). The VEGF-D protein, compounds and antibodies, which can bind  
CC the protein, may be useful in, e.g. gene therapy and in treatment of  
CC inflammation and oedema. Vectors, containing the VEGF-D DNA, and VEGF-D  
CC DNA sequences may be used for screening for the compounds which bind to  
CC the VEGF-D protein.  
SQ Sequence 1491 BP; 399 A; 336 C; 339 G; 417 T;
```

```
Query Match 40.2%; Score 806.6; DB 1; Length 1491;  
Best Local Similarity 81.6%; Pred. No. 5.8e-228;  
Matches 1004; Conservative 0; Mismatches 199; Indels 28; Gaps 5;  
Qy 148 ccacctctgattatttttggag-----aacatttggatttttttcatctctctctcccc 202  
Db 2 CCACCTCTGATTATTGTCGACGGGAAACTTTCAATAGTTTTCATCTCTTTCTCCCA 61  
Qy 203 acccctaagattgtgcacaaaagcgta--cctgcctaaatgaaataatttcattgat 260  
Db 62 TACTAAGATTGTGTGGCCGTGGGGAGTCTCTTGACTAACTCAAGTCATTTTCATTGGAT 121  
Qy 261 ttgatcagaactgatcatctgg-----tttctgtgtgaagtttggagtttcaaacct 315  
Db 122 TTTGATTAACAATGATCATGTGATATTTTTTTTCCATGTAAAGTTTGGGGCTTCAAACTT 181  
Qy 316 tctctctggagaatgccttttgaacaaattttctctagctgctgctgattcgaactcttag 375  
Db 182 TGCTTCTGGAGAAATGCCTTTTCGAACACTTTTACGTAGTCTGCTGGAACAACACTGCTTAG 241  
Qy 376 taatcagtgagata--ttgaataattcaaaatgtacagagagtggtgtagtggaagtgttt 434  
Db 242 CCATCAGTGGACATTTGAAATATTCAAATGTATGGAGAGTGGGCCGCGAGTGAATATTCT 301  
Qy 435 catgatgtgtacgtccagctggtgcagggctccagtaataaacaatggaccagtga--- 491  
Db 302 CATGATGTCTTATGTGTACCTGGTGCAGGGCTTCAGTATTGAACACCCGACGAGTGAAGGA 361  
Qy 491 -----agogatcatctcagtcacatttgaaacgatctgaaacagcagatcagggc 539  
Db 362 TGTCTTCTCTTGAGCGCATCATCCGCTCTGTGTGGAACGTTCTGAACAACACAGATCCGCGC 421  
Qy 540 tgcctctagtttggaggaaactactctcgaattactcaactctgaggagactggaagctgtgag 599  
Db 422 GGCTTCTACTTTGGAGAGATTGCTGCAAGTGCACACTCTGAGGACTGGAAGCTGTGGCG 481  
Qy 600 atgcaggtcagggctcaaaagttttaccagatggactctgctcagcatcccatcggtc 659  
Db 482 GTGCCGGTTGAAGCTTAAAGCTTTGCCAATCTGGACTCGGCTCAACATCCCATCGCTC 541  
Qy 660 cactaggtttggcgcaactttctatgacatbgaaacacataaaagtatatagatgaagaatg 719  
Db 542 CACCAGATTTGCGCAACTTTTCTATGATACTGAACACTTAAAGTTATAGATGAAGAATG 601  
Qy 720 gcaagaagaactcagtcagcccttagaagaacgtgcgtgagatggccagtgagtggaag 779  
Db 602 GCAGAGGACCAATCGACGCCCTAGAGACATGCGCTAGAAAGTCGCCAGTGAAGCTGGGAA 661
```

QY 780 gaggaccacacattcttcaagcccccttgtggaacgtgtgtccgatgtgtgtggtgttg 839  
DB 662 GACACCAACACATTTTCAAGCCCCCTTGTGAATGTCTCCGGTGTGGAGATGCTG 721  
QY 840 caatgaagagagccttatctgtatgaacacacgacacactgtacatttcccaaacagctctt 899  
DB 722 CAATGAAGAGAGCGTGATGTATGAACACAAGCACACCCCTCCATATCTCCAAACAGCTCTT 781  
QY 900 tgaqatacagtcgcttgatcagtcacgtacgtgaatagtcctgtttaaacttgcgaatca 959  
DB 782 TGAGATATCAGTGCCTGTGACATCAGTGCAGTGTAGTGGCTTTAAATTTGCCAACCA 841  
QY 960 tacaggtgttaagtgtctgccaacagccccccgcacatccatctcaattatcagaagatc 1019  
DB 842 TACGGGTGTGAAGTGTGGCCAGCGGCCCGCGCATCTTATTCATTTATCAGAAGATC 901  
QY 1020 catcagatccctgaagaagatcgctgttcccattccaagaacactgtcctattgacat 1079  
DB 902 CATTCAGATCCCAAGAAGATCAATGTCTCTCATTTCCAAGAAACTCTGTCTGTGACAT 961  
QY 1080 gctatgggatagcaacaattgtaattgttttgcagagagaaatccactgttgaac 1139  
DB 962 GCTGTGGGATAACACCAAAATGTAATGTGTTTACAAGATGAGAATCCACTGGCTGGGAC 1021  
QY 1140 agaagaccactctcatctccaggaaacagctctctgtgggccacacacatgatgtttgacga 1199  
DB 1022 AGAAGACCATCTTACCTCCAGNACCCGCTCTGTGTGGACACACATGATGTTGATGA 1081  
QY 1200 agatcgttgcgagtggtctgttaaaacacacatgtcccaagaagatcctaacccagcaccccaa 1259  
DB 1082 AGATCGTGCGAGTGTCTGTAAAGACCATGTCTCTGGAGATCTCATTCAGCACCCGGA 1141  
QY 1260 aaactgcagttgtttgagtgcaaaagactctgtggaacactgtgccagaagcacaaagct 1319  
DB 1142 AAATGCAAGTGTCTTGAATGCAAGAAAGTCTGGAAGAGTGTGTCACCAAAAGCACAAAGAT 1201  
QY 1320 attcaccagacacctgcagctgtgagac 1350  
DB 1202 GTTTCACCTTGACACCTGCAGATCAATGGTC 1232  
RESULT 10  
V20809  
ID V20809 standard; cDNA; 1135 BP.  
AC V20809;  
DT 03-AUG-1998 (first entry)  
DE Mus musculus vascular endothelial growth factor D2 (VEGF-D2) gene.  
KW vascular endothelial growth factor; VEGF-D; angiogenesis;  
KW modification; acceleration; wound healing; tissue; organ;  
KW transplants; collateral circulation; infarction; arterial stenosis;  
KW coronary artery disease; inhibition; cancer; treatment;  
KW diabetic retinopathy; lung disorders; blood circulation;  
KW gaseous exchange; chronic obstructive airway disease;  
KW intestinal malabsorptive syndrome; biopsy; metastatic risk;  
KW detection; diagnosis; congestive heart failure; ss.  
OS Mus musculus.  
FH Key Location/Qualifiers  
FT CDS 95..1060  
FT FT /\*tag= a  
FT FT /product= VEGF-D2  
FT FT /note= "Isolated from lung tissue"  
PN WQ9807832-A1.  
PD 26-FEB-1998.  
PF 21-AUG-1997; U14696.  
PR 01-JUL-1997; US-051426.  
PR 23-AUG-1996; AU-001825.  
PR 23-AUG-1996; US-023751.  
PR 11-NOV-1996; AU-003554.  
PR 14-NOV-1996; US-031097.  
PR 05-FEB-1997; AU-004954.  
PR 10-FEB-1997; US-038814.  
PR 19-JUN-1997; AU-007435.

PA (LUDW-) LUDWIG INST CANCER RES.  
PI (UYHE-) UNIV HELSINKI LICENSING LTD.  
PI Achen MG, Alitalo K, Stacker SA, Wilks AF;  
DR WPI; 98-179057/16.  
DR P-PSDB; W53243.  
PT New isolated vascular endothelial growth factor-D - used to develop  
PT products for use in e.g. modifying angiogenesis or treating lung,  
PT heart or intestinal disorders  
PS Claim 6; Pages 62-63; 101pp; English.  
CC The sequence is that encoding mouse vascular endothelial growth factor  
CC D2 (VEGF-D2). VEGF-D2 can be used for e.g. acceleration of angiogenesis  
CC in wound healing, tissue or organ transplantation, or to establish  
CC collateral circulation in tissue infarction or arterial stenosis,  
CC such as coronary artery disease, and inhibition of angiogenesis in  
CC the treatment of cancer or of diabetic retinopathy. It can also be  
CC used in the treatment of lung disorders to improve blood circulation  
CC in the lung and/or gaseous exchange between the lungs and the blood  
CC stream or to improve blood circulation to the heart and O2 gas  
CC permeability in cases of cardiac insufficiency, to improve blood  
CC flow and gaseous exchange in chronic obstructive airway disease,  
CC or to treat malabsorptive syndromes in the intestinal tract.  
CC Quantitation of VEGF-D in cancer biopsy specimens may be useful  
CC as an indicator of future metastatic risk. Antagonists can be used  
CC for treating e.g. conditions such as congestive heart failure,  
CC involving accumulations of fluid in the lung resulting from  
CC increases in vascular permeability. The products can also be used  
CC for detection and diagnosis.  
SQ Sequence 1135 BP; 310 A; 278 C; 266 G; 281 T;  
Query Match 39.7%; Score 796.4; DB 1; Length 1135;  
Best Local Similarity 85.9%; Pred. No. 5e-225;  
Matches 895; Conservative 0; Mismatches 146; Indels 1; Gaps 1;  
QY 310 aaacttccctctggagaatgccttttgaacaaatttctctagctgcctgagtccaact 369  
DB 1 AAATTTGCTTCTGGAGATGCCTTTTGGCAACACTTTTCAGTAGTGCCTGGAAACAAC 60  
QY 370 gcttagtaactcagtgagata-ttgaatatattcaaaatattacagagagtggtgagtaa 428  
DB 61 GCTTAGTCATCGGTAGACATTTAAATATTCAAAATATTATGGAGATGGGAATGGGAA 120  
QY 429 tgttttcctgatgtgtacgtccagctgtgtgcagggtccagtaataatgaacatgaccagt 488  
DB 121 TATCCTCATGATGTTCCATGTGTACTTGTGGAGCATCTGAACAACAGATCCGAGCAGCTTCTAG 180  
QY 489 gaagcgatcatctcagtcacattggcaacgatctgaacagcagatcaggctgctcttag 548  
DB 181 GAAGCGATCATCCGGTCCATGTTGGAAACGATCTGAACAACAGATCCGAGCAGCTTCTAG 240  
QY 549 ttggaggaactacttogaattactcaactctgaggaactggaagctgtggagatcaggct 608  
DB 241 TTTGGAGGAGTGTGCTGCAATTCGCGCACTCTGAGGACTTGAAGCTGTGGCGATGCCGTT 300  
QY 609 gaggctcaaaagttttaccagtagtgcctctcgctcagcaccatccctcagctcagtt 668  
DB 301 GAAGCTCAAAAGCTTTCAGTAGTGGACTCAGCTCAGCATCCCATCGTCCACCAATT 360  
QY 669 tgcggcaactttctatgacattgaacacactaaaagttagatgaagaatggcaagaac 728  
DB 361 TCGCGCAACTTTCTATCACACTGAACACATAAAAGTTATAGATGAAGATGGCAGAGAC 420  
QY 729 tcagtcagcccttagaagaacgtgcgtggagggtggccagtgagctgggggaagatgacaa 788  
DB 421 CCAATGCAGCCCTTAGAGAGACATCGCTAGAGTGCAGTGCAGTGGGGAAGACAACCAA 480  
QY 789 cacatttccaagcccttctgtgtgaacgtgttcccgatggtggtgtgtgtgcaatgaaga 848  
DB 481 CACATTTCTCAAGCCCCCTCTGTGTAATGTCTTCCGGTGTGGAGGCTGTGCAACGAAGA 540  
QY 849 gagccttatctgtatgaacacccagcactcgtacatttcccaaacagctctttgagatc 908  
DB 541 GGGTGTGATGTATGAACACAAGCACACCTCTCTACATCTCCAAACAGCTCTTTGAGATATC 600







PI Alitalo K, Joukov V;  
DR WPI: 98-437470/37.  
DR P-PSDB; W75742.  
PT New isolated vascular endothelial growth factor polypeptide(s) -  
PT oedema, granulocytopenia or for wound healing or tissue  
PT transplantation  
PS Example 20: Page 117-119; 177pp; English.  
CC The vascular endothelial growth factor C (VEGF-C) polypeptides have  
CC activities affecting growth and migration of vascular endothelial cells,  
CC promoting growth of lymphatic endothelial cells and lymphatic vessels,  
CC increasing vascular permeability, and affecting myelopoiesis. The  
CC products can be used for stimulating angiogenesis, for inhibiting  
CC angiogenesis, for stimulating lymphangiogenesis, treatment or prevention  
CC of inflammation, oedema, elephantiasis, or Milroy's disease. They can  
CC also be used to modulate myelopoiesis, e.g. treating granulocytopenia.  
CC They can also be used for modulating the growth of endothelial cells.  
CC They can also be used to stimulate lymphocyte production and maturation,  
CC and to promote or inhibit trafficking of leucocytes between tissues and  
CC lymphatic vessels or to affect migration in and out of the thymus.  
SQ Sequence 1836 BP; 521 A; 432 C; 450 G; 433 T;  
Query Match 6.9%; Score 137.6; DB 1; Length 1836;  
Best Local Similarity 52.7%; Pred. No. 1.4e-30;  
Matches 374; Conservative 0; Mismatches 324; Indels 12; Gaps 3;  
QY 523 gaacacagatcaggctgtctttagttggaggaaactacttgaattactactctgag 582  
DB 336 GAGGAGCAGTTGGGTCCTGCTCCACGGTAGATGATGCTGTCTGTACCCAGAC 395  
QY 583 gactgaagctgtggagatgcaggctgagcctcaaaagttttaccagtagtgactctgc 642  
DB 396 TACTGGAATAATGTACAAAGTGCAGCTGCGGAAGAGCGGCTGGCAGCGCCACCTCAAT 455  
QY 643 tcagatcccatcggctccactagtttgcggcaactttctatgacattgaacacactaaaa 702  
DB 456 ACCAGGACAGGGACAGTGTAAATTTGCTGTCACATTATTAACACAGAGATCTCTGAAA 515  
QY 703 gttatagatgaagaaatggcaagaactcagtcagccctagagaaacgctgctggaggctg 762  
DB 516 AGTATTTGATAAATGAGTGGAGAAAGACTCAATGCTGCCACGTCGAGTGTGTATAGATGTG 575  
QY 763 gccagtgagctggggaagagtaccacacatcttcaagcccttgctggaacgtgttc 822  
DB 576 GGAAGAGGTTTGGAGCAGCCCAACACCTCTTTAAACCTCCATGTGTGTCGCTTAC 635  
QY 823 cgatgtggtgctgttgcaatgaagagaccttctatctgtatgaacaccagcactcgtac 882  
DB 636 AGATGTGGGGTTGCTGCAACAGCAGAGGGGCTGCAGTGCATGAACACAGCAGGTTAC 695  
QY 883 atttcaaaacagctctttgagatatacagtcgctttgacatcagtaactgaattagtcct 942  
DB 696 CTGAGCAAGACGTTGTTGAAATTTACAGTGCCTCTCTCAAAAGGCCCAACACAGTCACA 755  
QY 943 gttaaagttgcaaatatacaggttgttaagctgttgcaca- - - - -gcccccgcacat 996  
DB 756 ATCAGTTTTGCAATCACACTTCCCTCCGGTGCATGCTCTAAACTTGGATGTTTACAGACAA 815  
QY 997 ccatactcaattatcagaagatccatccagatccctcctgaagaagatcgctgttcccattcc 1056  
DB 816 GTTCATTTCAATATTATAGAGCTTCTGTCGACGACNACATTTACCACAGTGTGAGGAGCTAAC 875  
QY 1057 aagaaactctgctctattgacatgctatgggtagcaacaaatgttaattgttttgcag 1116  
DB 876 AAGACA- - -TGTCCAAACAATATGTGTGGAATACTACATGTGCGCATGCTGCGCTCAG 932  
QY 1117 gaggaaataccacttctgctggaa- - -cagaagaccactctcatctccaggaacacagctctc 1173  
DB 933 CAGGATTTTATCTTTTATTTCAATATTGTAAGATGACTCAACCAATGGATTTCCATGATGTC 992  
QY 1174 tctgggcccacatgatgttttacgaagatcgtttgcagtgctgtctgtaa 1223

DB 993 TGTGGACCAACAAGGAGCTGGATGAAGACACCTGTCACTGTCTGTGCAA 1042  
RESULT 13  
T84300  
ID T84300 standard; cDNA; 1741 BP.  
AC T84300;  
DT 10-NOV-1997 (first entry)  
DE Quail Flt4 receptor tyrosine kinase ligand VEGF-C cDNA.  
KW VEGF-C; Flt4; receptor tyrosine kinase; VEGFR-3; quail;  
KW vascular endothelial growth factor receptor-3; ligand;  
KW angiogenesis; wound healing; lymph vessel; therapy; diagnosis; ss.  
OS Coturnix coturnix.  
FH Key Location/Qualifiers  
FT cds 453..1709  
FT /\*tag= a  
PN W09705250-A2.  
PD 13-FEB-1997.  
PF 01-AUG-1996; F10427.  
PR 28-JUN-1996; US-671573.  
PR 01-AUG-1995; US-510133.  
PR 12-JAN-1996; US-585895.  
PR 14-FEB-1996; US-601132.  
PA (UYHE-) UNIV HELSINKI LICENSING LTD OY.  
PI Alitalo K, Joukov V;  
DR WPI: 97-145688/13.  
DR P-PSDB; W00934.  
PT Flt4 receptor tyrosine kinase ligand and related nucleic acid - used  
PT to modulate growth of endothelial cells and for diagnosis of  
PT endothelial cell diseases  
PS Example 20: Page 124-126; 183pp; English.  
CC This cDNA clone codes for quail VEGF-C (W00934), a novel ligand  
CC that binds specifically to the Flt4 receptor tyrosine kinase  
CC (VEGFR-3), stimulating phosphorylation of the receptor. The clone  
CC was isolated from a quail cDNA library using mouse (see T84277)  
CC and human (see T84276) VEGF-C cDNA fragments as probes. The  
CC isolated polynucleotide can be used to produce recombinant  
CC polypeptides corresponding to non-human mammalian variants of  
CC VEGF-C.  
SQ Sequence 1741 BP; 445 A; 455 C; 449 G; 392 T;  
Query Match 6.7%; Score 134; DB 1; Length 1741;  
Best Local Similarity 52.4%; Pred. No. 1.6e-29;  
Matches 377; Conservative 0; Mismatches 325; Indels 18; Gaps 3;  
QY 523 gaacacagatcaggctgtctttagttggaggaaactacttgaattactactctgag 582  
DB 618 GAAGAGCAGTTGGATCTGTGTCACGTTGGATGAACCTCATGACAGTACTTTACCCAGAA 677  
QY 583 gactggaagctgtggagatgcaggctgagcctcaaaagttttaccagta- - - - - 632  
DB 678 TACTGGAATAATGTTCAAAATGTCAAGTTGAGGAAAGAGGTTGGCAACACACAGGGAACAC 737  
QY 632 -tggactctcgctcagcatcccatcggtccactagtttgcgcaactttctatgacatt 690  
DB 738 TCCAGCTCTGATACAGATCAGATGATTTCATTTGAAATTTGCCGCGACACATTATAATGCA 797  
QY 691 gaaacactaaagttatagatgaagaatggcaagaactcagtcgagccctagagaaacg 750  
DB 798 GAGATCTGAAAGTATTGATGTAAGTGAAGAAAACCCAGGCGATGCCACGTGAAGTG 857  
QY 751 tgcgtggaggtggccagtgagctggtggggaagagtagcaacacattcttcaagcccccttgt 810  
DB 858 TGTGTGGATTTGGGAAAGAGATTGGAGCAACTTACAACACCTTCTTTAAACCCCGTGT 917  
QY 811 gtgaacgctgttccagatgtgtggctgttccaatgaagagagccttctgtatgaacacc 870  
DB 918 GTATCCATCTACAGATGTGGAGGTGCTGCAATGATGTAAGGACTCCAGTGTATGATAATC 977  
QY 871 agcacctctacatttcccaacagctctttgagatcatcagtcgctttgacatcaglacct 930  
DB 978 AGCACAAATTACATCAGCAAGACATTGTTTGAGATTACAGTGCCTCTCTCATGCCCC 1037



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PF 06-JUN-1996; U09001.
PR 06-JUN-1995; US-465968.
PA (HUMA-) HUMAN GENOME SCI INC.
PI Cao L, Hu J, Rosen CA;
DR WPI; 97-043137/04.
DR P-PSDB; W11478.
PT DNA encoding human vascular endothelial growth factor 2 - used to
PT promote angiogenesis or endothelialisation in vascular graft surgery
PS Claim 1; Fig 1; 74pp; English.
CC A cDNA clone (751371) codes for human vascular endothelial growth
CC factor 2 (VEGF2) (W11478), a protein structurally related to the
CC VEGF/PDGF family that is capable of inducing angiogenesis in vivo.
CC It was discovered in a cDNA library derived from early stage human
CC embryo week 9. VEGF2 polynucleotides may also be obtd. from adult
CC heart or several breast cancer cell lines. VEGF2 nucleic acids
CC can be used in the prodn. of recombinant VEGF2, as probes to
CC detect mutations in the VEGF2, and in gene therapy to treat
CC patients in need of VEGF2. Antisense sequences can be used as
CC VEGF2 antagonists e.g. to inhibit growth of tumours.
SQ Sequence 1674 BP; 502 A; 384 C; 375 G; 413 T;

Query Match 6.4%; Score 129; DB 1; Length 1674;
Best Local Similarity 52.5%; Pred. No. 4.6e-28;
Matches 310; Conservative 0; Mismatches 275; Indels 6; Gaps 1;

Qy 642 ctcagatcccatcggtccactaggtttgaggcaactttctatgacattgaaacactaaa 701
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 311 CTCAAGGACAGAGAGACTATAAATTTGTGCACACATTTATAATACAGAGATCTTGA 370
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 702 agttatagatgaagaatggcaagaactcagtcagccctagagaaacgtgctggaggt 761
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 371 AAGTATTGATAAATGAGTGGAGAAAGACTCAATGCTGCCAGGGAGGTGTATAGATGT 430
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 762 ggcagtgagctggggaagagtaccacacattctcgaagcccttgtgtgaacgtgtt 821
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 431 GGGCAAGGAGTTTGGAGTCGCGACAAACACCTCTTTAAACCTCCATGCTGTCCGCTA 490
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 822 ccgatgtggtgctgttgcaatgaagagagcccttatctgtatgaacaccagccctcgt 881
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 491 CAGATGTGGGGGTTGCTGCAATAGTGAAGGGGCTGCAGTGCATGAACACCAACAGAGCTA 550
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 882 cattccaacacagctctttgagatcagtcgctttgacatcagctgaattagtgcc 941
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 551 CCTCAGCAAGACGTTATTGNAATTACAGTCCCTCTCTCTCAAGGCCCCCAACCAAGTAAC 610
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 942 tgttaaagttgccaatcacaaggttgtaagtgcttgccaaca-----gcccccccca 995
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 611 AATCAGTTTTGCCAATCACACTTCTCGCGATGCTCTAAACTGGATGTTTACAGACA 670
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 996 tccatactcaattatcagaagatccatccagatccctcgaagaagatcgctgttcccatc 1055
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 671 AGTTCATTCCATTATTAGACGTTCCCTGCCAGCAACACTACCACAGTGTCTAGGCAGCGAA 730
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 1056 caagaactctgtcctattgacatgctatggatagcaacaataatgtaaatgtgtttgca 1115
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 731 CAAGACCTGCCCCACCAATACATGTGGATATATACATCTGCAGATGCTGCTGCTCAGGA 790
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 1116 ggaggaataatccactgtctggaacagaagaccactctcatctccaggaaccagctctcg 1175
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 791 AGATTTTATGTTTTCTCGGATGCTGGAGATGACTCAACAGATGGATTCCATGACATCTG 850
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 1176 tgggccaacacatgatgtttgacgaagatcgttcgagtgctgtctgtataaac 1226
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Qy 851 TGGACCAACAAGGAGCTGGATGAAGAGACCTGTCTAGTGTGTCTGTGCAGAGC 901
Db ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
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RX MEDLINE; 99096474.
RA LEI J., JIANG A., PEI D.;
RT "Identification and characterization of a new splicing variant of
RT vascular endothelial growth factor: VEGF183";
RL Biochim. Biophys. Acta, Gene Struct. Expr. 1443:400-406(1998).
RN [2]
RP SEQUENCE OF 114-209 FROM N.A.
RC TISSUE-RETINA;
RA JINGJING L., ROQUE R.S.;
RL Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.
DR EMBL; AJ010438; CAA09179.1; -.
DR EMBL; AF062645; AAC16730.1; -.
DR HSSP; P15692; 2VPF.
DR PROSITE; PS00249; PDGF; 1.
KW Signal.
FT SIGNAL. 1 26 POTENTIAL.
FT CHAIN 27 209 VEGF183 PROTEIN.
SQ SEQUENCE 209 AA; 24422 MW; F2ABD204 CRC32;

Query Match 10.2%; Score 201; DB 4; Length 209;
Best Local Similarity 25.6%; Pred. No. 2.3e-11;
Matches 57; Conservative 25; Mismatches 81; Indels 60; Gaps 8;

QY 97 ETLKVIDEHWQRTQCSPRETCVEVASELGSKSTNTFFKPCVNVFRCGGCCNEESLICMNT 156
DQ 39 EVVKFMD-VYQSYCHPIETLVDIFOEYDEIEYIFKPCVPLMRCGGCCNDEGLECVPT 97
QY 157 STSYISKQLFEISVPLTSPV-----ELVPVKVANHTGCKCLPTAPRHPYSIIRRSIQIPEE 212
DQ 98 EESNITMQIMRIK-----PHOGQHIGEMSFLOHNRCECR-----PKK 134
QY 213 DRCSHSHKLCPLDMLWDSNKKCVLQEEENPLAGTETHSHLQEPALCGPHMFDRCCEV 272
DQ 135 DRARQKK-----SVRGK-----GKQKRKRKRKSRPCGP----- 164
QY 273 CKTPCPKDLIQHPKNGSCFECKESLETCCQKHKLFPDPTCSCE 315
DQ 164 CSERRKHLFVQDPQTKC-SCNWTDSRCKARQLELNERTCRCD 205

RESULT 10
QY 97 ETLKVIDEHWQRTQCSPRETCVEVASELGSKSTNTFFKPCVNVFRCGGCCNEESLICMNT 156
AC Q9XSF3 PRELIMINARY; PRT; 190 AA.
DT 01-NOV-1999 (TREMBLrel. 12, Created)
DT 01-NOV-1999 (TREMBLrel. 12, Last sequence update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR 164.
GN VEGF.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Carnivora; Fissipedia; Canidae; Canis.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-HEART;
RA JINGJING L., ROQUE R.S.;
RL Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF133248; AAD29682.1; -.
DR PROSITE; PS00249; PDGF; 1.
SQ SEQUENCE 190 AA; 22292 MW; A0EIF28B CRC32;

Query Match 10.1%; Score 199; DB 6; Length 190;
Best Local Similarity 24.2%; Pred. No. 3.2e-11;
Matches 54; Conservative 25; Mismatches 66; Indels 78; Gaps 8;

QY 97 ETLKVIDEHWQRTQCSPRETCVEVASELGSKSTNTFFKPCVNVFRCGGCCNEESLICMNT 156
DQ 38 EVVKFMD-VYQSYCHPIETLVDIFOEYDEIEYIFKPCVPLMRCGGCCNDEGLECVPT 96
QY 157 STSYISKQLFEISVPLTSPV-----ELVPVKVANHTGCKCLPTAPRHPYSIIRRSIQIPEE 212
DQ 134 CSERRKHLFVQDPQTKC-SCNWTDSRCKARQLELNERTCRCD 205

QY 97 EEFNITMQIMRIK-----PHOGQHIGEMSFLOHNSKCECR-----PKK 133
QY 213 DRCSHSHKLCPLDMLWDSNKKCVLQEEENPLAGTETHSHLQEPALCGPHMFDRCCEV 272
DQ 134 DRA-----RQENP-----CGP----- 145
QY 273 CKTPCPKDLIQHPKNGSCFECKESLETCCQKHKLFPDPTCSCE 315
DQ 145 CSERRKHLFVQDPQTKC-SCNWTDSRCKARQLELNERTCRCD 186

RESULT 11
QY 273 CKTPCPKDLIQHPKNGSCFECKESLETCCQKHKLFPDPTCSCE 315
AC Q42572 PRELIMINARY; PRT; 194 AA.
DT 01-JAN-1998 (TREMBLrel. 05, Created)
DT 01-JAN-1998 (TREMBLrel. 05, Last sequence update)
DT 01-NOV-1999 (TREMBLrel. 12, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR 196.
GN VEGF.
OS Xenopus laevis (African clawed frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Amphibia;
OC Batrachia; Anura; Mesobatrachia; Pipoidae; Pipidae; Xenopodinae;
OC Xenopus.
RN [1]
RP SEQUENCE FROM N.A.
RA CLEAVER O., TONISSEN K.F., SAHA M.S., KRIEG P.A.;
RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF008594; AAB63680.1; -.
DR HSSP; P15692; 2VGH.
DR PROSITE; PS00249; PDGF; 1.
DR PFAM; PF00341; PDGF; 1.
SQ SEQUENCE 194 AA; 22672 MW; 74B8253A CRC32;

Query Match 10.1%; Score 198.5; DB 13; Length 194;
Best Local Similarity 21.4%; Pred. No. 3.6e-11;
Matches 57; Conservative 34; Mismatches 88; Indels 87; Gaps 9;

QY 50 LBEALLRITHSEDKWLRCRLRLKSFSTMSRSASHSTRFAATFYDIETLKVDEHWQRT 109
DQ 12 LAVLLYIPHAQ-----LSGAAPMPG-EGDHRKPTV-----VKFLKV-----YERS 50
QY 110 QCSPRETCVEVASELGSKSTNTFFKPCVNVFRCGGCCNEESLICMNTSYISKQLFEIS 169
DQ 51 MCQVREILVDIFOEYDEIEYIFKPCVPLMRCAGCCNDESECVTECYNTITQIMKIK 110
QY 170 VPLTSPVPELVPVKVANHTGCKCLPTAPRHPYSIIRRSIQIPEEDRCSHSHKLCPLDMLWD 229
DQ 111 PHISQ--HIMDNSFQHSQCECRP-----KKEVSKQENHC----- 145
QY 230 SNKKCVLQEEENPLAGTETHSHLQEPALCGPHMFDRCCEVCKTPCPKDLIQHPKNGS 289
DQ 145 -----EPCTEKSQRKHL-----FVQDPQTKC 165
QY 290 CFECKESLETCCQKHKLFPDPTCSCE 315
DQ 166 C-SCNWTDSRCKTRQLELNERTCRCE 190

RESULT 12
QY 290 CFECKESLETCCQKHKLFPDPTCSCE 315
AC Q94446 PRELIMINARY; PRT; 170 AA.
DT 01-FEB-1997 (TREMBLrel. 02, Created)
DT 01-FEB-1997 (TREMBLrel. 02, Last sequence update)
DT 01-NOV-1999 (TREMBLrel. 12, Last annotation update)
DE 220 KDA SILK PROTEIN.
GN SP220.
OS Chironomus thummi thummi (Midge).
OC Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
OC Pterygota; Neoptera; Endopterygota; Diptera; Nematocera;
OC Chironomidae; Chironominae; Chironomus.
```

RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE-SALIVARY GLAND;  
 RA CASE S.T., COX C., BELL W.C., HOFFMAN R.T., MARTIN J., HAMILTON R.;  
 RL Submitted (APR-1996) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; U54641; AAA99804.1; -  
 DR HSP; P04355; 4MT2.  
 DR PRINTS; PR00876; MTNEMATODE.  
 SQ SEQUENCE 1704 AA; 185745 MW; 0245A38E CRC32;

Query Match  
 Best Local Similarity 10.1%; Score 198.5; DB 5; Length 1704;  
 Matches 73; Conservative 42; Mismatches 92; Indels 129; Gaps 17;  
 QY 109 TQCSPRETCVEVASELGKSTNFFKPCVNVF-----CGGCCNEESLICMTSTSYISK 163  
 Db 1079 TNCPAKQTFIESECCGCT-----RPKLDGFRNSLECCVCDEKK--CQ-----GK 1125  
 QY 164 QLFELSVPLTVP-----ELVPVKVANHGTGCKLPTAPRHPYSIIRRSIQIPE 211  
 Db 1126 QIFDKNTCKCPNEKPGDSGKGKPCVPDCS-----CRCKGPKPANGCP-----GVQEW 1177  
 QY 212 EDRG-----SHSKKLCPIDMLWDSNKKCVLOEENP-LAGTDEHSHLQEPALCGPHM-- 263  
 Db 1178 EDKCKCEPKDKSKTTCEGGKKNWNOCCGCTPAPTCSASOKYSNTVCTSCGCPGMPA 1237  
 QY 263 -----MFDRECEVCVKTPCP-----KDLIOHPK 286  
 Db 1238 KGCPGNVWCNSQCVCNMEKPADNGNKNWMDKACECEKPGCGEAGCKGVQKWK 1297  
 QY 287 N-CSCFEKESLET--CCQKHKLFPDTCSEDR-----CPFH-----T 322  
 Db 1298 NTCAC-ECPPGKATPASCDDGKSNWPDSCQCKSKMPPGGCPSNQWNCETCKCECSGT 1356  
 QY 323 RPAOSGKT-----ACAKHCR 337  
 Db 1357 QTCPAQSWDSQTCQCSGCPATGCTGAQFWCAKOCK 1392

RESULT 13  
 Q9XSF4  
 ID Q9XSF4 PRELIMINARY; PRT; 208 AA.  
 DT 01-NOV-1999 (TRENBLrel. 12, Created)  
 DT 01-NOV-1999 (TRENBLrel. 12, Last sequence update)  
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR 182.  
 GN VEGF.  
 OS Canis familiaris (Dog).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 OC Eutheria; Carnivora; Fissipedia; Canidae; Canis.  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=HEART;  
 RA JINGJING L., ROQUE R.S.;  
 RL Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AF133249; AAD39683.1; -  
 DR PROSITE; PS00249; PDGF; 1.  
 SQ SEQUENCE 208 AA; 24400 MW; A8266335 CRC32;

Query Match  
 Best Local Similarity 10.0%; Score 196; DB 6; Length 208;  
 Matches 56; Conservative 26; Mismatches 81; Indels 60; Gaps 8;  
 QY 97 ETLKVIDEWMQTCSPRETVEVASELGKSTNFFKPCVNVFRCGCCNEESLICMT 156  
 Db 38 EVVKFMD-VYORSYCRPIETLVDFIQEYDEIYFKPCVPLMRCGCCNDEGLECVPT 96  
 QY 157 STSYISKQLFEISVPLTVP-----ELVPVKVANHGTGCKLPTAPRHPYSIIRRSIQIPE 212  
 Db 97 EEFNITMOIMRIK-----PHQOHIGEMSFLQHNKCECR-----PKK 133

QY 213 DRCSSKKLCPIDMLWDSNKKCVLOEENPLAGTDEHSHLQEPALCGPHMFDRECECV 272  
 Db 134 DRARQKK-----SVRGK-----GKGKRRKKSRPCGP----- 163  
 QY 273 CKTPCPKDLIOHPKNCSCFEKESLETCCQKHKLFPDTCSE 315  
 Db 163 CSERRKHLFVQDPQCKC-SCKNTDSRCKARQLELNERTCRCD 204

RESULT 14  
 Q75875  
 ID Q75875 PRELIMINARY; PRT; 191 AA.  
 DT 01-NOV-1998 (TRENBLrel. 08, Created)  
 DT 01-NOV-1998 (TRENBLrel. 08, Last sequence update)  
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR.  
 OS Homo sapiens (Human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 OC Eutheria; Primates; Catarrhini; Homidae; Homo.  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=HEART;  
 RA CLAFFEY K.P., SHIH S.-C., MULLEN A., DZIENNIS S., CUSICK J.L.,  
 RA ABRAMS K.R., LEE S.W., DETMAR M.;  
 RT Identification of a human VPF/VEGF 3' untranslated region mediating  
 RT hypoxia-induced mRNA stability.  
 RL Mol. Biol. Cell 9:469-481(1998).  
 DR EMBL; AF022375; AAC63143.1; -  
 DR HSP; P15692; 1VPP.  
 DR PFAM; PF00341; PDGF; 1.  
 SQ SEQUENCE 191 AA; 22320 MW; 3D6B10B2 CRC32;

Query Match  
 Best Local Similarity 9.9%; Score 195; DB 4; Length 191;  
 Matches 54; Conservative 24; Mismatches 67; Indels 78; Gaps 8;  
 QY 97 ETLKVIDEWMQTCSPRETVEVASELGKSTNFFKPCVNVFRCGCCNEESLICMT 156  
 Db 39 EVVKFMD-VYORSYCRPIETLVDFIQEYDEIYFKPCVPLMRCGCCNDEGLECVPT 97  
 QY 157 STSYISKQLFEISVPLTVP-----ELVPVKVANHGTGCKLPTAPRHPYSIIRRSIQIPE 212  
 Db 98 EESNITMOIMRIK-----PHQOHIGEMSFLQHNKCECR-----PKK 134  
 QY 213 DRCSSKKLCPIDMLWDSNKKCVLOEENPLAGTDEHSHLQEPALCGPHMFDRECECV 272  
 Db 135 DRA-----RQENP-----CGP----- 146  
 QY 273 CKTPCPKDLIOHPKNCSCFEKESLETCCQKHKLFPDTCSE 315  
 Db 146 CSERRKHLFVQDPQCKC-SCKNTDSRCKARQLELNERTCRCD 187

RESULT 15  
 Q9XSF5  
 ID Q9XSF5 PRELIMINARY; PRT; 214 AA.  
 AC Q9XSF5;  
 DT 01-NOV-1999 (TRENBLrel. 12, Created)  
 DT 01-NOV-1999 (TRENBLrel. 12, Last sequence update)  
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR 188.  
 GN VEGF.  
 OS Canis familiaris (Dog).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 OC Eutheria; Carnivora; Fissipedia; Canidae; Canis.  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=HEART;  
 RA JINGJING L., ROQUE R.S.;

RL Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.

DR EMBL; AF133250; AAD29684.1; -.

DR PROSITE; PS00249; PDGF; 1.

SQ SEQUENCE 214 AA; 25151 MW; 84CD48B8 CRC32;

```

Query Match      9.78; Score 191; DB 6; Length 214;
Best Local Similarity 25.18; Pred. No. 2e-10;
Matches 56; Conservative 27; Mismatches 86; Indels 54; Gaps 8;

Qy 97 ETLXVIDEEMORTQCSPRETCVEVASELGKSTNTFFPPCVNVRFCGGCCNEESLICMNT 156
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 38 EVKFKMD-VIORSYCRPIETLVDIFQEPYDEIEYIFKPSVPLMRGCGCCNDEGLECVPT 96
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :

Qy 157 STSVISKQLFEISVPLTSVP-----ELVPVKVANITGCKCLPTAPHPHYSIIRRSIQIPEE 212
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 97 EEFNITQIWMRIK-----PHQGGHIGEMSFLQHSKCECR-----PKK 133
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :

Qy 213 DRCSHSKKLCPIDLMDWSNKKCVLQENPLAGTETHSLQEPALCGPHMMFDEDCRCBV 272
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 134 DRARQEKK-----SVRGKGGKQRRK---RKKSRYSKWSVPCGP----- 169
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :

Qy 273 KCTPCPKDLIQHPNKCSCFECKESLETCCQKHKLFPDPTCSCE 315
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 169 CSERRKHLFVDDPTCKRC-SCKNTDSDRCARQLELNERTCRCD 210
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :

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Search completed: May 16, 2000, 16:41:32  
Job time: 6556 sec

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GenCore version 4.5  
Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on: May 16, 2000, 12:32:20 ; Search time 32.09 Seconds  
(without alignments)  
261.293 Million cell updates/sec

Title: US-09-214-982-1  
Perfect score: 1963  
Sequence: 1 MYREWVVVFMVLMYVLQV.....HCRFPKRAAQGPHSRKNP 354

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 188963 seqs, 23686106 residues

Total number of hits satisfying chosen parameters: 188963

Minimum DB seq length: 0  
Maximum DB seq length: 1000000

Post-processing: Minimum Match 0%  
Listing first 45 summaries

Database : A\_Geneseq\_36.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	1963	100.0	354	1 W44293	Human vascular end
2	1963	100.0	354	1 W53241	Homo sapiens vascu
3	1963	100.0	354	1 W49036	Human zveg12 growt
4	1917	97.7	620	1 W14994	Human c-Fos induce
5	1804	91.9	325	1 W53240	Homo sapiens vascu
6	1675	85.3	358	1 W44295	Mouse vascular end
7	1675	85.3	358	1 W53242	Mus musculus vascu
8	1671	85.1	358	1 W14992	Murine c-Fos induc
9	1522	77.5	321	1 W53243	Mus musculus vascu
10	1517.5	77.3	326	1 W44296	Rat vascular endot
11	706.5	36.0	419	1 W11478	Human vascular end
12	704.5	35.9	399	1 W86237	Human VEGF-C full
13	704.5	35.9	419	1 W09332	Human foetal liver
14	704.5	35.9	419	1 W17837	Human vascular end
15	704.5	35.9	419	1 W75740	Human vascular end
16	704.5	35.9	419	1 W86203	Human vascular end
17	696	35.5	415	1 W09333	Mouse Vlt4 recepto
18	696	35.5	415	1 W75742	Mouse vascular end
19	695.5	35.4	419	1 W13833	Human vascular end
20	693.5	35.3	419	1 W75751	Vascular endotheli
21	677	34.5	418	1 W09334	Quail Vlt4 recepto
22	677	34.5	418	1 W75743	Quail vascular end
23	659.5	33.6	350	1 R82686	Vascular endotheli
24	615.5	31.4	307	1 W86222	Human VEGF-C trunc
25	604.5	30.8	302	1 W86223	Human VEGF-C trunc
26	593.5	30.2	297	1 W86224	Human VEGF-C trunc
27	570.5	29.1	292	1 W86225	Human VEGF-C trunc
28	212.5	10.8	588	1 W00592	SAP-AlaMet-VEGF165
29	210	10.7	598	1 R94074	SAP-(Gly4Ser)-VEGF16
30	207	10.5	594	1 W00591	SAP-AlaMet-VEGF165
31	207	10.5	595	1 W00595	SAP-Glyser-VEGF165
32	205.5	10.5	192	1 R94040	VEGF165 Cys+2. Vas
33	205	10.4	165	1 W31086	Vascular endotheli
34	204.5	10.4	600	1 W00593	SAP-AlaMet-VEGF165

35	204.5	10.4	612	1 W00596	SAP-(Gly4Ser)-2VEGF1
36	204	10.4	165	1 R38921	Human VEGF-165, Is
37	204	10.4	191	1 R08002	Human vascular end
38	204	10.4	191	1 R91076	Human vascular end
39	204	10.4	191	1 R94002	VEGF165. Vascular
40	204	10.4	191	1 W00724	Vascular endotheli
41	204	10.4	191	1 W38242	Vascular endotheli
42	204	10.4	191	1 W69331	Human VEGF protein
43	204	10.4	191	1 Y07725	Human VEGF protein
44	204	10.4	192	1 R94039	VEGF165 Cys+4. Vas
45	204	10.4	421	1 W00584	SAP-AlaMet-VEGF165

ALIGNMENTS

RESULT 1

W44293  
ID W44293 standard; Protein; 354 AA.

AC W44293;

DT 22-JUN-1998 (first entry)

DE Human vascular endothelial growth factor D.

KW Human; vascular endothelial growth factor D; VEGF-D; gene therapy;

OS Homo sapiens.

PN W09802543-A1.

PD 22-JAN-1998.

PF 15-JUL-1997; J02456.

PR 15-JUL-1996; JP-185216.

PA (CHUG-) CHUGAI RES INST MOLECULAR MEDICINE INC.

PI Hirata Y, Nezu J;

DR WPI: 98-110591/10.

DR N-PSDB; V15156.

PT VEGF-D protein encoded by DNA - useful for, e.g. gene therapy and

PT treating oedema

PS Claim 1; Page 18-20; 52pp; Japanese.

CC The present sequence represents human vascular endothelial growth factor

CC D (VEGF-D). The VEGF-D protein, compounds and antibodies, which can bind

CC the protein, may be useful in, e.g. gene therapy and in treatment of

CC inflammation and oedema. Vectors, containing the VEGF-D DNA, and VEGF-D

CC DNA sequences may be used for screening for the compounds which bind to

CC the VEGF-D protein.

SQ Sequence 354 AA;

Query Match 100.0%; Score 1963; DB 1; Length 354;

Best Local Similarity 100.0%; Pred. No. 1.7e-150;

Matches 354; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MYREWVVVFMVLMYVLQVGGSSNEHGPVKRSSQSLERSEQQIRAASSLEELLRTTSE 60

Db 1 MYREWVVVFMVLMYVLQVGGSSNEHGPVKRSSQSLERSEQQIRAASSLEELLRTTSE 60

QY 61 DWKLWRCRLRLKLSFTSMDSRSASHRSTRFAATFYDIETLKVIDEWQRTQCSPRETCVEV 120

Db 61 DWKLWRCRLRLKLSFTSMDSRSASHRSTRFAATFYDIETLKVIDEWQRTQCSPRETCVEV 120

QY 121 ASELGKSTNTFFKPPCVNVFRGCGCCNEESLICMNTSTYSISKOLFSEISVPLTSPVELVP 180

Db 121 ASELGKSTNTFFKPPCVNVFRGCGCCNEESLICMNTSTYSISKOLFSEISVPLTSPVELVP 180

QY 181 VKVANHTGCKCLPTAPRHPSYIIRRSIQIPEEDRCSHKKLCPIDMLWDSNCKCKVLOEE 240

Db 181 VKVANHTGCKCLPTAPRHPSYIIRRSIQIPEEDRCSHKKLCPIDMLWDSNCKCKVLOEE 240

QY 241 NPLAGTEDSHLQEPALCPGPHMMFDEDRCEVCVCKTCPKDLIOHPKNCSCFECKSELET 300

Db 241 NPLAGTEDSHLQEPALCPGPHMMFDEDRCEVCVCKTCPKDLIOHPKNCSCFECKSELET 300

QY 301 CQKHKLFLHPTDSCEDRCPCPFHTRPCASGKTACAKHCRFPKRAAQGPHSRKNP 354

Db 301 CQKHKLFLHPTDSCEDRCPCPFHTRPCASGKTACAKHCRFPKRAAQGPHSRKNP 354

RESULT 2  
W53241  
ID W53241 standard; Protein: 354 AA.  
AC W53241;  
DE 03-AUG-1998 (first entry)  
DT Homo sapiens vascular endothelial growth factor D (VEGF-D).  
KW vascular endothelial growth factor; VEGF-D; angiogenesis;  
KW modification; acceleration; wound healing; tissue; organ;  
KW transplants; collateral circulation; infarction; arterial stenosis;  
KW coronary artery disease; inhibition; cancer; treatment;  
KW diabetic retinopathy; lung disorders; blood circulation;  
KW gaseous exchange; chronic obstructive airway disease;  
KW intestinal malabsorptive syndrome; biopsy; metastatic risk;  
KW detection; diagnosis; congestive heart failure.  
OS Homo sapiens.  
PN W09807832-A1.  
PD 26-FEB-1998.  
PF 21-AUG-1997; U14696.  
PR 01-JUL-1997; US-051426.  
PR 23-AUG-1996; AU-001825.  
PR 23-AUG-1996; US-023751.  
PR 11-NOV-1996; AU-003554.  
PR 14-NOV-1996; US-031097.  
PR 05-FEB-1997; AU-004954.  
PR 10-FEB-1997; US-038814.  
PR 19-JUN-1997; AU-007435.  
PA (LUDW.) LUDWIG INST CANCER RES.  
PA (UTHE-) UNIV HELSINKI LICENSING LTD.  
PI Achen MG, Alitalo K, Stacker SA, Wilks AF;  
DR WPI; 98-179057/16.  
DR N-PSDB; V20807.  
FT New isolated vascular endothelial growth factor-D - used to develop  
FT products for use in e.g. modifying angiogenesis or treating lung,  
FT heart or intestinal disorders  
PS Claim 16; Pages 60-61; 101pp; English.  
CC The sequence is that of human lung vascular endothelial growth factor  
CC D (VEGF-D). VEGF-D can be used for e.g. acceleration of angiogenesis  
CC in wound healing, tissue or organ transplantation, or to establish  
CC collateral circulation in tissue infarction or arterial stenosis,  
CC such as coronary artery disease, and inhibition of angiogenesis in  
CC the treatment of cancer or of diabetic retinopathy. It can also be  
CC used in the treatment of lung disorders to improve blood circulation  
CC in the lung and/or gaseous exchange between the lungs and the blood  
CC stream or to improve blood circulation to the heart and O2 gas  
CC permeability in cases of cardiac insufficiency, to improve blood  
CC flow and gaseous exchange in chronic obstructive airway disease,  
CC or to treat malabsorptive syndromes in the intestinal tract.  
CC Quantitation of VEGF-D in cancer biopsy specimens may be useful  
CC as an indicator of future metastatic risk. Antagonists can be used  
CC for treating e.g. conditions such as congestive heart failure,  
CC involving accumulations of fluid in the lung resulting from  
CC increases in vascular permeability. The products can also be used  
CC for detection and diagnosis.  
SQ Sequence 354 AA;

Query Match 100.0%; Score 1963; DB 1; Length 354;  
Best Local Similarity 100.0%; Pred. No. 1.7e-150;  
Matches 354; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 MYRWVVNVFVWMLYVQLVOGSSNHEGVPKRSOSTLSEQQIRAASSLLELRITHSE 60  
DB 1 MYRWVVNVFVWMLYVQLVOGSSNHEGVPKRSOSTLSEQQIRAASSLLELRITHSE 60  
QY 61 DNKLWRCRLRLKSFSTSMDSRASHRSTFAATFYDIETLKVIDEWORTQCSPRETCVEV 120  
DB 61 DNKLWRCRLRLKSFSTSMDSRASHRSTFAATFYDIETLKVIDEWORTQCSPRETCVEV 120  
QY 121 ASFLKSTNTFFKPPCVNVFRCGGCCNEESLICMNTSTSYISKQLFISVPLTSVPELVP 180  
DB 121 ASFLKSTNTFFKPPCVNVFRCGGCCNEESLICMNTSTSYISKQLFISVPLTSVPELVP 180

QY 181 VKYANTGCKCLPTAPRHPYSIIIRRSIQIPEEDRCSKSLCPIDMLWDSNCKCVLQEE 240  
DB 181 VKYANTGCKCLPTAPRHPYSIIIRRSIQIPEEDRCSKSLCPIDMLWDSNCKCVLQEE 240  
QY 241 NPLAGTEDSHLQEPALCGPHMFMFDEDCRCVCVKTPCPKDLIQHKNKSCFCKESLFTC 300  
DB 241 NPLAGTEDSHLQEPALCGPHMFMFDEDCRCVCVKTPCPKDLIQHKNKSCFCKESLFTC 300  
QY 301 CQKHKLFPDTCSCEDRCPPHTRPCASGKTACAKHCRFPKPKRAAQQPHSRKNP 354  
DB 301 CQKHKLFPDTCSCEDRCPPHTRPCASGKTACAKHCRFPKPKRAAQQPHSRKNP 354  
RESULT 3  
ID W49036 standard; Protein: 354 AA.  
AC W49036;  
DT 26-OCT-1998 (first entry)  
DE Human zveg2 growth factor.  
KW Human zveg2 growth factor.  
KW Human zveg2 growth factor; mitogen; fibroblast; smooth muscle cell;  
KW venous stasis ulcer; diabetic ulcer; skin wound; chemotactic effect;  
KW angiogenic effect; tumour; diabetic retinopathy; psoriasis; arthritis;  
KW scleroderma.  
OS Homo sapiens.  
FH Key Location/Qualifiers  
FT Peptide 1..23  
FT Peptide /note= "Signal peptide"  
FT Peptide 24..108  
FT Binding\_site /note= "Pro-region"  
FT Binding\_site 109..197  
FT Region /note= "Receptor binding domain"  
FT Region 206..256  
FT Region /note= "Cysteine-rich domain"  
FT Region 257..274  
FT Region /note= "Balbiani ring motif"  
FT Region 275..294  
FT Region /note= "Balbiani ring motif"  
FT Region 295..354  
FT Region /note= "Cysteine-rich domain"  
PN W09824811-A2.  
PD 11-JUN-1998.  
PF 20-NOV-1997; U20888.  
PR 18-SEP-1997; US-933455.  
PR 06-DEC-1996; US-759657.  
PA (ZYMO ) ZYMOGENETICS INC.  
PI Conklin DC, Gilbert T, Hart CE, Nygaard S, Sheppard PO;  
DR WPI; 98-333256/29.  
DR N-PSDB; V32823.  
PT New isolated vascular endothelial growth factor - used to develop  
PT products for treating e.g. wounds, burns, myocardial infarction,  
PT tumours, psoriasis, arthritis, restenosis or organ transplants  
PS Claim 1; Pages 53-54; 77pp; English.  
CC The present sequence represents a human zveg2 growth factor encoded  
CC by the zveg2 cDNA which was isolated from a human heart cDNA library.  
CC zveg2 protein in a dimeric form acts as a mitogen for fibroblasts or  
CC smooth muscle cells. zveg2 is claimed to be useful for stimulating the  
CC revascularisation of tissue or the re-endothelialisation of vascular  
CC tissue. zveg2 is particularly claimed to be useful for the treatment  
CC of full-thickness skin wounds, including venous stasis ulcers and  
CC diabetic ulcers. The zveg2 protein is also claimed to be useful as an  
CC additive in tissue adhesives for promoting revascularisation of the  
CC healing tissue. Antagonists against zveg2 can be used to block its  
CC mitogenic, chemotactic and angiogenic effects. The antagonists may  
CC therefore be useful for reducing growth of solid tumours by inhibiting  
CC neovascularisation of the developing tumour or by directly blocking  
CC tumour cell growth, in the treatment of diabetic retinopathy, psoriasis,  
CC arthritis, and scleroderma.  
SQ Sequence 354 AA;

Query Match 100.0%; Score 1963; DB 1; Length 354;  
Best Local Similarity 100.0%; Pred. No. 1.7e-150;  
Matches 354; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
QY 1 MYREVVVVVFMMLYVOLVOGSSNEHGPVKRSSQSTLERSEQQIRASSLEELLRIHSE 60
Db 1 MYREVVVVVFMMLYVOLVOGSSNEHGPVKRSSQSTLERSEQQIRASSLEELLRIHSE 60
QY 61 DWLWRCRLRLKLSFTSMDSRSASHRSRFAATFYDIETLKVIDEEMQRTQCSPRETCVEY 120
Db 61 DWLWRCRLRLKLSFTSMDSRSASHRSRFAATFYDIETLKVIDEEMQRTQCSPRETCVEY 120
QY 121 ASELGKSTNTFFPPPCVNVFRCGCCNEESLICMNTSTSYISKQLFEISVPLTSVPELVP 180
Db 121 ASELGKSTNTFFPPPCVNVFRCGCCNEESLICMNTSTSYISKQLFEISVPLTSVPELVP 180
QY 181 VKVANHTGCKCLPTAPRHPYSIIRRSIQIPEEDRCSHKKLCPIDMLWDSNKKCKVLQEE 240
Db 181 VKVANHTGCKCLPTAPRHPYSIIRRSIQIPEEDRCSHKKLCPIDMLWDSNKKCKVLQEE 240
QY 241 NPLAGTEDHSHLQEPALCGPHMFDREDCVCVKTCPCPKDLIQHPKNCSCFECKESLTC 300
Db 241 NPLAGTEDHSHLQEPALCGPHMFDREDCVCVKTCPCPKDLIQHPKNCSCFECKESLTC 300
QY 301 CQKHLEPHDPTCSCEDRCPPHTRPCASGKTACAKHCRFPKRAAQGPHSRKNP 354
Db 301 CQKHLEPHDPTCSCEDRCPPHTRPCASGKTACAKHCRFPKRAAQGPHSRKNP 354

RESULT 4
W14994
ID W14994 standard; Protein; 620 AA.
AC W14994;
DE 05-JUL-1997 (first entry)
DE Human c-Fos induced growth factor (clone HF175 ORF2 product).
KW c-Fos induced growth factor; FIGF; Fos regulated gene;
KW proto-oncogene; lung disorder; cancer; tumour; therapy;
KW antibody; transgenic animal.
OS Homo sapiens.
FH Key
FH Location/Qualifiers
FT misc_difference 16
FT /note= "residue 16 corresponds to an in-frame
FT stop codon in reading frame 2 of HF175"
FT
FT misc_difference 26
FT /note= "residue 26 corresponds to an in-frame
FT stop codon in reading frame 2 of HF175"
FT
FT misc_difference 29
FT /note= "residue 29 corresponds to an in-frame
FT stop codon in reading frame 2 of HF175"
FT
FT misc_difference 47
FT /note= "residue 47 corresponds to an in-frame
FT stop codon in reading frame 2 of HF175"
FT
FT misc_difference 71
FT /note= "residue 71 corresponds to an in-frame
FT stop codon in reading frame 2 of HF175"
FT
FT misc_difference 72
FT /note= "residue 72 corresponds to an in-frame
FT stop codon in reading frame 2 of HF175"
FT
FT misc_difference 76
FT /note= "residue translated from ORF2 of HF175
FT is Ile"
FT
FT misc_difference 136
FT /note= "residue translated from ORF2 of HF175
FT is Ile"
FT
FT misc_difference 220
FT /note= "residue translated from ORF2 of HF175
FT is Phe"
FT
FT misc_difference 341
FT /note= "residue translated from ORF2 of HF175
FT is His"
FT
FT misc_difference 344
FT /note= "residue translated from ORF2 of HF175
FT is Phe"
FT
FT misc_difference 377
FT /note= "residue translated from ORF2 of HF175
FT is Leu"
FT

misc_difference 435
/note= "residue 435 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 486
/note= "residue 486 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 497
/note= "residue 497 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 518
/note= "residue 518 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 541
/note= "residue 541 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 553
/note= "residue 553 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 557
/note= "residue 557 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 562
/note= "residue 562 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 579
/note= "residue 579 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 592
/note= "residue 592 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 593
/note= "residue 593 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 597
/note= "residue 597 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 605
/note= "residue 605 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
misc_difference 608
/note= "residue 608 corresponds to an in-frame
stop codon in reading frame 2 of HF175"
WO9712972-A2.
10-APR-1997.
PD 10-APR-1997.
PF 20-SEP-1996; IB1113.
PR 29-SEP-1995; GB-019928.
PR 13-JUN-1996; GB-012368.
PA (UYSI-) UNIV SIENA.
PI Oliviero S;
DR WPI: 97-226216/20.
DR N-PSDB; T62961.
PT Nucleotide molecule encoding c-Fos induced growth factor protein -
PT useful in therapy, in manufacture of compositions for treatment of
PT developmental disorders and in generation of transgenic animal
PS Claim 3; Fig 2; 64pp; English.
CC 3 Polypeptide sequences (W14993-95) are the respective translated
CC sequences of reading frames 1, 2 and 3 of clone HF175 (T62961), the
CC human homologue of murine clone F0401 (T62960), which codes for a
CC novel c-Fos induced growth factor (FIGF) (see also W14992).
CC Examination of the 3 polypeptides indicates that reading frame 2
CC has the longest region free of nonsense codons. FIGF is a c-fos-
CC dependent autocrine growth factor able to induce cell division
CC entry and, when over-expressed, a transformed phenotype in
CC fibroblasts. It could be implicated in tumours and development.
CC Recombinant FIGF can be produced in transformed host (e.g. CHO
CC cells. It can be used to identify its receptors and in an assay
CC for the identification of agonists and antagonists. Antibodies
CC raised against FIGF can be used to block the function of the
CC protein and thereby inhibit or suppress tumour growth. Transgenic
CC animals expressing FIGF can be generated for use e.g. as models for
CC research.
SQ Sequence 620 AA;
```

Query Match 97.7%; Score 1917; DB 1; Length 620;  
Best Local Similarity 98.0%; Pred. No. 1.6e-146;  
Matches 347; Conservative 1; Mismatches 6; Indels 0; Gaps 0;

QY 1 MYREVVVVFMMYLVQLVQSSNEHGPKVRSSSTLERSEQQIRAAASLEELLRTTHSE 60  
DB 81 MYREVVVVFMMYLVQLVQSSNEHGPKVRSSSTLERSEQQIRAAASLEELLRTTHSE 140  
QY 61 DWKLRCLRLKSTMSDSASHSRSTRFATFDITLKVDEWORTQCSRETCEV 120  
DB 141 DWKLRCLRLKSTMSDSASHSRSTRFATFDITLKVDEWORTQCSRETCEV 200  
QY 121 ASELGKSTNTFFKPPCVNVRFCGCCNEESLCMNTSTYSISKQLFEISVPLTSVPLVP 180  
DB 201 ASELGKSTNTFFKPPCVNVRFCGCCNEESLCMNTSTYSISKQLFEISVPLTSVPLVP 260  
QY 181 VKVANHTGCKLPTAPRHPYSIIRSTQIPEEDRCSHKKLCPIDMLWDSNKKCVLQEE 240  
DB 261 VKVANHTGCKLPTAPRHPYSIIRSTQIPEEDRCSHKKLCPIDMLWDSNKKCVLQEE 320  
QY 241 NPLAGTEDHSHLQEPALCGPHMFDREDCVCVKTPCKDLIOHPKNCSCFECKESLTC 300  
DB 321 NPLAGTEDHSHLQEPALCGPHMFDREDCVCVKTPCKDLIOHPKNCSCFECKESLTC 380  
QY 301 CQKHLFHPDTCSCEDRCPPHTRPCASGKTACAKHCRFPKRAAOGPHSRKNP 354  
DB 381 CQKHLFHPDTCSCEDRCPPHTRPCASGKTACAKHCRFPKRAAOGPHSRKNP 434

RESULT 5  
W53240  
ID W53240 standard; Protein; 325 AA.  
AC W53240;  
DE 03-AUG-1998 (first entry)  
KW Homo sapiens vascular endothelial growth factor D (VEGF-D).  
KW vascular endothelial growth factor; VEGF-D; angiogenesis;  
KW modification; acceleration; wound healing; tissue; organ;  
KW transplants; collateral circulation; infarction; arterial stenosis;  
KW coronary artery disease; inhibition; cancer; treatment;  
KW diabetic retinopathy; lung disorders; blood circulation;  
KW gaseous exchange; chronic obstructive airway disease;  
KW intestinal malabsorptive syndrome; biopsy; metastatic risk;  
KW detection; diagnosis; congestive heart failure.  
OS Homo sapiens.  
FH Key  
FT Location/Qualifiers  
FT Region  
FT 126..128  
FT /note= "potential N-linked glycosylation site"  
FT Region  
FT 156..158  
FT /note= "potential N-linked glycosylation site"  
FT Region  
FT 258..260  
FT /note= "potential N-linked glycosylation site"  
PN W09807832-A1.  
PD 26-FEB-1998.  
PF 21-AUG-1997; U14696.  
PR 01-JUL-1997; US-051426.  
PR 23-AUG-1996; AU-001825.  
PR 23-AUG-1996; US-023751.  
PR 11-NOV-1996; AU-003554.  
PR 14-NOV-1996; US-031097.  
PR 05-FEB-1997; AU-004954.  
PR 10-FEB-1997; US-038814.  
PR 19-JUN-1997; AU-007435.  
PA (LUDW-) LUDWIG INST CANCER RES.  
PA (UYHE-) UNIV HELSINKI LICENSING LTD.  
PI Achen MG, Alicalo K, Stacker SA, Wilks AF;  
DR WPI: 98-179057/16.  
DR N-PSDB; V20806.  
PT New isolated vascular endothelial growth factor-D - used to develop  
PT products for use in e.g. modifying angiogenesis or treating lung,  
PT heart or intestinal disorders  
PS Claim 16; Pages 57-58; 101pp; English.  
CC The sequence is that of human breast vascular endothelial growth factor

D (VEGF-D). VEGF-D can be used for e.g. acceleration of angiogenesis  
in wound healing, tissue or organ transplantation, or to establish  
collateral circulation in tissue infarction or arterial stenosis,  
such as coronary artery disease, and inhibition of angiogenesis in  
the treatment of cancer or of diabetic retinopathy. It can also be  
used in the treatment of lung disorders to improve blood circulation  
in the lung and/or gaseous exchange between the lungs and the blood  
stream or to improve blood circulation to the heart and O2 gas  
permeability in cases of cardiac insufficiency, to improve blood  
flow and gaseous exchange in chronic obstructive airway disease,  
or to treat malabsorptive syndromes in the intestinal tract.  
Quantitation of VEGF-D in cancer biopsy specimens may be useful  
as an indicator of future metastatic risk. Antagonists can be used  
for treating e.g. conditions such as congestive heart failure,  
involving accumulations of fluid in the lung resulting from  
increases in vascular permeability. The products can also be used  
for detection and diagnosis.  
SQ Sequence 325 AA;

Query Match 91.9%; Score 1804; DB 1; Length 325;  
Best Local Similarity 100.0%; Pred. No. 9.3e-138;  
Matches 324; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 31 RSSQSTLERSEQIRAAASLEELLRTTHSEDKWLRCLRLKSTMSDSASHSRSTRFA 90  
DB 2 RSSQSTLERSEQIRAAASLEELLRTTHSEDKWLRCLRLKSTMSDSASHSRSTRFA 61  
QY 91 ATFYDIETLKVDEWQRTQCSRETCEVASELGKSTNTFFKPPCVNVRFCGCCNEES 150  
DB 62 ATFYDIETLKVDEWQRTQCSRETCEVASELGKSTNTFFKPPCVNVRFCGCCNEES 121  
QY 151 LICMNTSTYSISKQLFEISVPLTSVPELVKPVKVAHNTGCKLPTAPRHPYSIIRSIQIP 210  
DB 122 LICMNTSTYSISKQLFEISVPLTSVPELVKPVKVAHNTGCKLPTAPRHPYSIIRSIQIP 181  
QY 211 EEDRCSSHKKLCPIDMLWDSNKKCVLQEENPLAGTEDHSHLQEPALCGPHMFDREDC 270  
DB 182 EEDRCSSHKKLCPIDMLWDSNKKCVLQEENPLAGTEDHSHLQEPALCGPHMFDREDC 241  
QY 271 CVCKTPCKDLIOHPKNCSCFECKESLTCQKHLFHPDTCSCEDRCPPHTRPCASGKT 330  
DB 242 CVCKTPCKDLIOHPKNCSCFECKESLTCQKHLFHPDTCSCEDRCPPHTRPCASGKT 301  
QY 331 ACACHCRFPKRAAOGPHSRKNP 354  
DB 302 ACACHCRFPKRAAOGPHSRKNP 325

RESULT 6  
W44295  
ID W44295 standard; Protein; 358 AA.  
AC W44295;  
DT 22-JUN-1998 (first entry)  
DE Mouse vascular endothelial growth factor D.  
KW Mouse; vascular endothelial growth factor D; VEGF-D; gene therapy;  
KW inflammation; oedema.  
OS Mus sp.  
PN W09802543-A1.  
PD 22-JAN-1998.  
PF 15-JUL-1997; J02456.  
PR 15-JUL-1996; JP-185216.  
PA (CHUG-) CHUGAI RES INST MOLECULAR MEDICINE INC.  
PI Hirata Y, Nezu J;  
DR WPI: 98-110591/10.  
DR N-PSDB; V15177.  
PT VEGF-D protein encoded by DNA - useful for, e.g. gene therapy and  
PT treating oedema  
PS Example 7; Page 32-35; 52pp; Japanese.  
CC The present sequence represents mouse vascular endothelial growth factor  
D (VEGF-D). The VEGF-D protein, compounds and antibodies, which can bind  
CC the protein, may be useful in, e.g. gene therapy and in treatment of  
CC inflammation and oedema. Vectors, containing the VEGF-D DNA, and VEGF-D

New isolated vascular endothelial growth factor-D - used to develop products for use in e.g. modifying angiogenesis or treating lung, heart or intestinal disorders

Claim 16; Pages 63-64; 101pp; English.

The sequence is that of mouse lung vascular endothelial growth factor D1 (VEGF-D1). VEGF-D1 can be used for e.g. acceleration of angiogenesis in wound healing, tissue or organ transplantation, or to establish collateral circulation in tissue infarction or arterial stenosis.

PN WO9712972-A2.  
PD 10-APR-1997.  
PE 30-SEP-1996; IB1113.  
PF 29-SEP-1995; GB-019928.  
PR 13-JUN-1996; GB-012368.  
PS (UYSI-) UNIV SIENA.  
PA Oliviero S; PI  
DR WPI; 97-226216/20.  
DR N-PSDB; T62960.  
DR Nucleotide molecule encoding c-Fos induced growth factor protein -  
PT useful in therapy, in manufacture of compositions for treatment of  
PT developmental disorders and in generation of transgenic animal  
PT Claim 3; Fig 1; 64pp; English.  
CC Novel murine c-Fos induced growth factor (FIGF) (W14992) shows

CC homology to the growth factor VEGF. It is encoded by the F0401  
 CC gene (762960) obtd. from mouse fibroblast cells. FIGF is a c-fos-  
 CC dependent autocrine growth factor able to induce cell division  
 CC entry and, when over-expressed, a transformed phenotype in  
 CC fibroblasts. It could be implicated in tumours and development.  
 CC Recombinant FIGF can be produced in tumours and development.  
 CC cells. It can be used to identify its receptors and in an assay  
 CC for the identification of agonists and antagonists. Antibodies  
 CC raised against FIGF can be used to block the function of the  
 CC protein and thereby inhibit or suppress tumour growth. Transgenic  
 CC animals expressing FIGF can be generated for use e.g. as models for  
 CC research. 358 AA;  
 SQ

Query Match 85.1%; Score 1671; DB 1; Length 358;  
 Best Local Similarity 83.6%; Pred. No. 5.1e-127;  
 Matches 300; Conservative 21; Mismatches 32; Indels 6; Gaps 2;  
 QY 1 MYREVVVNFVMMYLVQVSSNEHGPVK-----RSSQSTLERSEQQIRAAASLEELLR 55  
 DB 1 MYGEMGNILMFHVLVQGRSEHGPVKDFSPERSRSMLESEQQIRAAASLEELLQ 60  
 QY 56 ITHSDWLWCRLLKLSFTSMDSRSASHRSTRAATFYDTETLKVDEWQRTQCSPRE 115  
 DB 61 IAHSDWLWCRLLKLSASMESRSASHRSTRAATFYDTETLKVDEWQRTQCSPRE 120  
 QY 116 TCVEVASLKGSTNTFFKPPCVNVFRGCGCCNEESLTCMTSTSYISKQLFEISVPLTSV 175  
 DB 121 TCVEVASLKGSTNTFFKPPCVNVFRGCGCCNEGVCMCTSTSYISKQLFEISVPLTSV 180  
 QY 176 PELVPKVANTGCKCLPTAPRHPYSIIRSIQIPEDRCSHKKLCPIDMLWDSNKKCK 235  
 DB 181 PELVPKIANHTGCKCLPTGPRHPYSIIRSIQIPEDRCSHKKLCPIDMLWDSNKKCK 240  
 QY 236 VLOENPLAGTDEHSHLOEPALCPHMFDEDRCEVCYKPCPKDLIQHPKNCSCFECKE 295  
 DB 241 VLOETPLGTEDHSYLQEPALCPHMFDEDRCEVCYKPCPKDLIQHPKNCSCFECKE 300  
 QY 296 SLETCCKHKLFPDTCSCEDRCPFHTRPCASGKTACAKHCRPPKPKRAAQGPHSRKPN 354  
 DB 301 SLESCCKHKLFPDTCSCEDRCPFHTRPCASRKPACGKHWRPKETR-AQGLYSQENP 358

RESULT 9  
 W53243  
 ID W53243 standard; Protein; 321 AA.  
 AC W53243;  
 DT 03-AUG-1998 (first entry)  
 DE Mus musculus vascular endothelial growth factor D2 (VEGF-D2).  
 KW vascular endothelial growth factor; VEGF-D; angiogenesis;  
 KW modification; acceleration; wound healing; tissue; organ;  
 KW transplants; collateral circulation; infarction; arterial stenosis;  
 KW coronary artery disease; inhibition; cancer; treatment;  
 KW diabetic retinopathy; lung disorders; blood circulation;  
 KW gaseous exchange; chronic obstructive airway disease;  
 KW intestinal malabsorptive syndrome; biopsy; metastatic risk;  
 KW detection; diagnosis; congestive heart failure.  
 OS Mus musculus.  
 PN WO9807832-AL.  
 PD 26-FEB-1998.  
 PF 21-AUG-1997; U14696.  
 PR 01-JUL-1997; US-051426.  
 PR 23-AUG-1996; AU-001825.  
 PR 23-AUG-1996; US-023751.  
 PR 11-NOV-1996; AU-003554.  
 PR 14-NOV-1996; US-031097.  
 PR 05-FEB-1997; AU-004954.  
 PR 10-FEB-1997; US-038814.  
 PR 19-JUN-1997; AU-007435.  
 PA (LUDW-) LODWIG INST CANCER RES.  
 PA (UYHE-) UNIV HELSINKI LICENSING LTD.  
 PI Achen' Mg, Alitalo K, Stacker SA, Wilks AF;

DR WPI: 98-179057/16.  
 DR N-PSDB; V20809.  
 PT New isolated vascular endothelial growth factor-D - used to develop  
 PT products for use in e.g. modifying angiogenesis or treating lung,  
 PT heart or intestinal disorders  
 PS Claim 16; Pages 64-65; 101pp; English.  
 CC The sequence is that of mouse lung vascular endothelial growth factor  
 CC D2 (VEGF-D2). VEGF-D2 can be used for e.g. acceleration of angiogenesis  
 CC in wound healing, tissue or organ transplantation, or to establish  
 CC collateral circulation in tissue infarction or arterial stenosis,  
 CC such as coronary artery disease, and inhibition of angiogenesis in  
 CC the treatment of cancer or of diabetic retinopathy. It can also be  
 CC used in the treatment of lung disorders to improve blood circulation  
 CC in the lung and/or gaseous exchange between the lungs and the blood  
 CC stream or to improve blood circulation to the heart and O2 gas  
 CC permeability in cases of cardiac insufficiency, to improve blood  
 CC flow and gaseous exchange in chronic obstructive airway disease,  
 CC or to treat malabsorptive syndromes in the intestinal tract.  
 CC Quantitation of VEGF-D in cancer biopsy specimens may be useful  
 CC as an indicator of future metastatic risk. Antagonists can be used  
 CC for treating e.g. conditions such as congestive heart failure,  
 CC involving accumulations of fluid in the lung resulting from  
 CC increases in vascular permeability. The products can also be used  
 CC for detection and diagnosis.  
 SQ Sequence 321 AA;

Query Match 77.5%; Score 1522; DB 1; Length 321;  
 Best Local Similarity 86.5%; Pred. No. 4.3e-115;  
 Matches 270; Conservative 17; Mismatches 25; Indels 0; Gaps 0;

QY 1 MYREVVVNFVMMYLVQVSSNEHGPVKRSQSSTLERSEQQIRAAASLEELLRTHSE 60  
 DB 1 MYGEMGNILMFHVLVQGRSEHGPVKRSRSMLESEQQIRAAASLEELLQAHSE 60  
 QY 61 DWKLWCRLLKLSFTSMDSRSASHRSTRAATFYDTETLKVDEWQRTQCSPRETCVEV 120  
 DB 61 DWKLWCRLLKLSASMDSRSASHRSTRAATFYDTETLKVDEWQRTQCSPRETCVEV 120  
 QY 121 ASELGKSTNTFFKPPCVNVFRGCGCCNEESLTCMTSTSYISKQLFEISVPLTSVPELVP 180  
 DB 121 ASELGKTTNTFFKPPCVNVFRGCGCCNEGVCMCTSTSYISKQLFEISVPLTSVPELVP 180  
 QY 181 VKVANHTGCKCLPTAPRHPYSIIRSIQIPEDRCSHKKLCPIDMLWDSNKKCVLOEE 240  
 DB 181 VKIANHTGCKCLPTGPRHPYSIIRSIQIPEDRCSHKKLCPIDMLWDSNKKCVLOEE 240  
 QY 241 NPLAGTDEHSHLOEPALCPHMFDEDRCEVCYKPCPKDLIQHPKNCSCFECKESLETC 300  
 DB 241 TPLPGTDEHSHYLQEPALCPHMFDEDRCEVCYKPCPKDLIQHPKNCSCFECKESLESC 300  
 QY 301 COXKHLFHPDTC 312  
 DB 301 COXKHLFHPDTC 312

RESULT 10  
 W44296  
 ID W44296 standard; Protein; 326 AA.  
 AC W44296;  
 DT 22-JUN-1998 (first entry)  
 DE Rat vascular endothelial growth factor D.  
 KW Rate; vascular endothelial growth factor D.  
 KW inflammation; oedema.  
 OS Rattus sp.  
 PN WO9802543-AL.  
 PD 22-JAN-1998.  
 PF 15-JUL-1997; J02456.  
 PR 15-JUL-1996; JP-185216.  
 PA (CHUG-) CHUGAI RES INST MOLECULAR MEDICINE INC.  
 PI Hirata Y, Nezu J;  
 DR WPI: 98-110591/10.  
 DR N-PSDB; V15178.

Query Match 36.0%; Score 706.5; DB 1; Length 419;  
Best Local Similarity 38.9%; Pred. No. 2.1e-49;  
Matches 140; Conservative 61; Mismatches 88; Indels 71; Gaps 11;  
41 ECGIIRAASLELLRITIHSEDKWLRCLRL-----KSF SMSRSASHRSTRAATFY 94

[illegible]

RESULT	12	
W86237		
ID	W86237 standard; protein; 399 AA.	
AC	W86237;	
DT	16-FEB-1999 (first entry)	
DE	Human VEGF-C full length sequence.	
KE	VEGF: Vrp; vascular endothelial growth factor; VEGF-related protein;	
KW	recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia	
KW	coronary; collateral vessel development; cell growth; migration; heart	
KW	lower limb ischaemia; stroke; peripheral vascular disease; intestine;	
KW	wound healing; skin; vascular permeability.	
OS	Homo sapiens.	
PN	W09849300-A2.	
PD	05-NOV-1998.	
PF	20-APR-1998; U07801.	
PR	25-APR-1997; US-842984.	
PA	(COLL-) COLLATERAL THERAPEUTICS.	
PI	Bohlen P;	
PR	wpr: 99-009426/01	

New truncated vascular endothelial growth factor-related protein subunits - lack part of the N-terminal sequence, used to stimulate angiogenesis, e.g. for treating heart disease and ischaemia (Claim 5; Fig 2D; 113pp).

The invention relates to truncated VRP (vascular endothelial growth factor (VEGF)-related protein) subunits that have at least one amino acid N-terminal to the first Cys of the core sequence deleted. Host cells transformed or transfected with expression vectors containing nucleic acids encoding the truncated VRP subunits are used to produce the truncated proteins recombinantly. The truncated VRP subunits, optionally expressed from gene therapy vectors, have *in vivo* and *in vitro* angiogenic activity and are used to stimulate angiogenesis, particularly coronary collateral vessel development in cases of cardiac ischaemia; to stimulate endothelial cell growth and migration *in vitro*; to treat heart disease; to treat ischaemia (e.g. cardiac, chronic coronary or chronic lower limb

CC ischaemia; stroke and peripheral vascular disease); to promote healing of  
CC wounds (of skin or intestines), and to increase vascular permeability.  
CC Sequences W86234 to W86239 represent full length VRP sequences from  
CC which the truncated fragments are created.  
SQ Sequence 399 AA;

Query Match 35.9%; Score 704.5; DB 1; Length 399;  
Best Local Similarity 38.9%; Pred. No. 2.9e-49;  
Matches 140; Conservative 61; Mismatches 88; Indels 71; Gaps 11;  
QY 41 EQQIRAAASLEELLRIHSEDKWLRCLRL-----KSFTSMDSRSASHRSTREAAFTY 94  
DQ 10-NOV-1997 (first entry)  
DE Human Flt4 receptor tyrosine kinase ligand VEGF-C.  
KW VEGF-C; Flt4; receptor tyrosine kinase; VEGFR-3; human;  
KW vascular endothelial growth factor receptor-3; ligand;  
KW angiogenesis; wound healing; lymph vessel; lymphangioma;  
KW cancer; metastasis; therapy; diagnosis; antibody; inhibitor.  
OS Homo sapiens.  
FH Key  
FT 1. 102  
FT peptide  
FT /label= prepro\_peptide  
FT 32. .227  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 15)"  
FT 103. .217  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 12)"  
FT 103. .225  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 13)"  
FT 103. .227  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 14)"  
FT 113. .213  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 10)"  
FT 113. .227  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 11)"  
FT 131. .211  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 9)"  
FT 161. .221  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 9)"

FN WO9705250-A2. retaining Flt4 ligand activity (Claim 8)"  
PD 13-FEB-1997.  
PF 01-AUG-1996; FI0427.  
PR 28-JUN-1996; US-671573.  
PR 01-AUG-1995; US-510133.  
PR 12-JAN-1996; US-585895.  
PR 14-FEB-1996; US-601132.  
PA (UYHE-) UNIV HELSINKI LICENSING LTD OY.  
PI Alitalo K, Joukov V;  
DR MPI; 97-145688/13.  
DR N-PSDB; T84276.  
PT Flt4 receptor tyrosine kinase ligand and related nucleic acid - used  
PT to modulate growth of endothelial cells and for diagnosis of  
PT endothelial cell diseases.  
PS Claim 7; Page 112-113; 183pp; English.  
CC This polypeptide comprises the pre-pro sequence of human VEGF-C,  
CC a novel ligand that binds specifically to human Flt4 receptor  
CC tyrosine kinase (VEGFR-3), stimulating phosphorylation of the  
CC receptor. Its sequence was deduced from a cDNA clone (T84276)  
CC obtd. from a PC-3 prostatic adenocarcinoma cell (ATCC CRL 1435)  
CC library. The polypeptide, or its active fragments, can be  
CC expressed in transformed or transfected host cells for use in  
CC claimed methods for detecting endothelial cells (e.g. to image  
CC lymphatic vessels, endothelial venules, Flt4 receptor in  
CC histochemical tissue) and also to modulate the growth of mammalian  
CC endothelial cells (e.g. to accelerate angiogenesis and to promote  
CC endothelial function of lymphatic vessels). Inhibitors of  
CC VEGF-C, such as antibodies, can be used to control endothelial  
CC cell proliferation, e.g. lymphangioma or metastatic cancer.  
CC Mouse and quail VEGF-C sequences (see W00934-35) have also been  
CC isolated.  
SQ Sequence 419 AA;

Query Match 35.9%; Score 704.5; DB 1; Length 419;  
Best Local Similarity 38.9%; Pred. No. 3e-49;  
Matches 140; Conservative 61; Mismatches 88; Indels 71; Gaps 11;  
QY 41 EQQIRAAASLEELLRIHSEDKWLRCLRL-----KSFTSMDSRSASHRSTREAAFTY 94  
DQ 10-NOV-1997 (first entry)  
DE Human Flt4 receptor tyrosine kinase ligand VEGF-C.  
KW VEGF-C; Flt4; receptor tyrosine kinase; VEGFR-3; human;  
KW vascular endothelial growth factor receptor-3; ligand;  
KW angiogenesis; wound healing; lymph vessel; lymphangioma;  
KW cancer; metastasis; therapy; diagnosis; antibody; inhibitor.  
OS Homo sapiens.  
FH Key  
FT 1. 102  
FT peptide  
FT /label= prepro\_peptide  
FT 32. .227  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 15)"  
FT 103. .217  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 12)"  
FT 103. .225  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 13)"  
FT 103. .227  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 14)"  
FT 113. .213  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 10)"  
FT 113. .227  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 11)"  
FT 131. .211  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 9)"  
FT 161. .221  
FT /note= "preferred active fragment of VEGF-C,  
FT retaining Flt4 ligand activity (Claim 9)"  
RESULT 14  
WL7837  
ID WL7837 standard; Protein; 419 AA.  
AC WL7837;  
DT 13-JAN-1998 (first entry)  
DE Human foetal liver kinase A binding protein flk-lbp.  
KW Foetal liver kinase 1 binding protein; human; flk-lbp;  
KW receptor tyrosine kinase; vasculogenesis; angiogenesis;  
KW wound healing; tumour; therapy; antagonist; antibody.



OS Homo sapiens. Location/Qualifiers  
 FH Key 1..20  
 FT Peptide /label= Sig\_peptide  
 FT Protein 21..419  
 FT /label= Mat\_protein  
 FT /note= "(Claim 10)"  
 FT Peptide 21..35  
 FT /label= N-terminal  
 FT /note= "(Claim 9)"  
 PN W09717442-A1.  
 PD 15-MAY-1997.  
 PE 05-NOV-1996; U17584.  
 PR 08-NOV-1995; US-554374.  
 PA (IMMUNEX ) IMMUNEX CORP.  
 PI Lyman SD;  
 DR WPI; 97-281031/25.  
 DR N-PSDB; T68811.  
 PT DNA encoding a human foetal liver kinase 1 binding protein - used to treat conditions with insufficient protein, deliver agents to cells and identify antagonists to treat protein-mediated conditions  
 PT Claim 1; Page 30-32; 43pp; English.  
 PS This polypeptide comprises a human foetal liver kinase 1 binding protein (flk-1bp) (see W17837) that binds to the receptor tyrosine kinase flk-1 expressed on vascular endothelial and other cells.  
 CC The mature flk1-bp can be secreted from host cells transformed with an expression vector including an isolated flk-1bp cDNA clone (see T68811). Flk-1bp can be used to isolate cells to which it binds, for use in studying the roles of such cells and of flk-1 in vasculogenesis and angiogenesis. Angiogenesis inhibition or increased vascularisation may be clinically desirable (e.g. to suppress solid tumour growth or in wound healing, respectively).  
 CC The flk-1bp can be administered to treat conditions with defective or insufficient flk-1. Polypeptides may also act as carriers to deliver diagnostic/therapeutic agents to cells to which flk1-bp binds, to generate antibodies, and to identify flk-1bp antagonists useful for treating flk-1bp mediated conditions.  
 CC Sequence 419 AA;

Query Match 35.9%; Score 704.5; DB 1; Length 419;  
 Best Local Similarity 38.9%; Pred. No. 3e-49;  
 Matches 140; Conservative 61; Mismatches 88; Indels 71; Gaps 11;

QY 41 EQQIRASSLEELLRTHSEDWKLWRCRLRL-----KSFSTMSDRSASHRSTRFAATFY 94  
 Db 57 EQQLRSVSSVDELMVTLYPEYWKMYKQRLKGGWQHNRQANLSR--TEETIKFAAAHY 114  
 QY 95 DIETLKVIDEEMWORTQCSPRETCVEVASELKGSTNTFFKPPCVNVPFCGCCNEESLICM 154  
 Db 115 NTEILASIDNEWKTKOCMPREVCIIDVKEGEGVATNTFFKPPCVSVYRCGCCNSEGLQCM 174  
 QY 155 NTSTSYISKOLFPEISVPLTSVPELVKPVKVAHNTGCKCLPTAP--RHYPYSIIRSI--QIP 210  
 Db 175 NTSTSYLSKTLFEITVPLSGQPKPVTISFANHTSCRCMSKLDVYRQVHSIIRSLPATLP 234  
 QY 211 EEDRCSHSHKLCIPDMLWDSNCKCKVLQE-----ENPLAGTED----HSHLOE--- 255  
 Db 235 Q-----COAANKTCPTNTYNNHHCICLAQEDFMFSDAGDDSTGDFHIDICGNKELDEETC 291  
 QY 255 -----PALCGPH-----MMFDEDRCEVCCKTPCKDOL 281  
 Db 292 QCVCRAGLRPASCGRPHKELDRNSCQCCKVKNKLPFPOGGANREDENTCCVCCKRTCPRNQ 351  
 QY 282 IQHPKNCSECKESLETCCQKHKLFPDTCSCDCRCPFHTRPCASGKTACAKHCRFPKE 341  
 Db 352 PLNPGKACAC-ECTESPQKCLLKGKFFHQTCS-----YRRPCTNRQACACEPGFSYSEE 404

RESULT 15

W75740

ID W75740 standard; Protein; 419 AA.

AC W75740;

DT 20-NOV-1998 (first entry)  
 DE Human vascular endothelial growth factor C protein.  
 KW Flt4; vascular endothelial growth factor C; vascular endothelial cell;  
 KW lymphatic endothelial cell; myelopoiesis; angiogenesis; inflammation;  
 KW lymphangiogenesis; oedema; elephantiasis; Milroy's disease.  
 OS Homo sapiens.  
 PN W09833917-A1.  
 PD 06-AUG-1998.  
 PE 02-FEB-1998; U01973.  
 PR 05-FEB-1997; US-795430.  
 PA (LUDW-) LUDWIG INST CANCER RES.  
 PI (UYHE-) UNIV HELSINKI LICENSING LTD.  
 PI Alitalo K, Joukov V;  
 DR WPI; 98-437470/37.  
 DR N-PSDB; V52576.  
 PT New isolated vascular endothelial growth factor polypeptide(s) - used to develop products for treating, e.g. cancers, inflammation, oedema, granulocytopenia or for wound healing or tissue transplantation  
 PT Claim 1; Page 112-115; 177pp; English.  
 PS The vascular endothelial growth factor C (VEGF-C) polypeptides have activities affecting growth and migration of vascular endothelial cells, promoting growth of lymphatic endothelial cells and lymphatic vessels, increasing vascular permeability, and affecting myelopoiesis. The products can be used for stimulating angiogenesis, for inhibiting angiogenesis, for stimulating lymphangiogenesis, treatment or prevention of inflammation, oedema, elephantiasis, or Milroy's disease. They can also be used to modulate myelopoiesis, e.g. treating granulocytopenia. They can also be used for modulating the growth of endothelial cells. They can also be used to stimulate lymphocyte production and maturation, and to promote or inhibit trafficking of leucocytes between tissues and lymphatic vessels or to affect migration in and out of the thymus.  
 CC Sequence 419 AA;

Query Match 35.9%; Score 704.5; DB 1; Length 419;  
 Best Local Similarity 38.9%; Pred. No. 3e-49;  
 Matches 140; Conservative 61; Mismatches 88; Indels 71; Gaps 11;

QY 41 EQQIRASSLEELLRTHSEDWKLWRCRLRL-----KSFSTMSDRSASHRSTRFAATFY 94  
 Db 57 EQQLRSVSSVDELMVTLYPEYWKMYKQRLKGGWQHNRQANLSR--TEETIKFAAAHY 114  
 QY 95 DIETLKVIDEEMWORTQCSPRETCVEVASELKGSTNTFFKPPCVNVPFCGCCNEESLICM 154  
 Db 115 NTEILASIDNEWKTKOCMPREVCIIDVKEGEGVATNTFFKPPCVSVYRCGCCNSEGLQCM 174  
 QY 155 NTSTSYISKOLFPEISVPLTSVPELVKPVKVAHNTGCKCLPTAP--RHYPYSIIRSI--QIP 210  
 Db 175 NTSTSYLSKTLFEITVPLSGQPKPVTISFANHTSCRCMSKLDVYRQVHSIIRSLPATLP 234  
 QY 211 EEDRCSHSHKLCIPDMLWDSNCKCKVLQE-----ENPLAGTED----HSHLOE--- 255  
 Db 235 Q-----COAANKTCPTNTYNNHHCICLAQEDFMFSDAGDDSTGDFHIDICGNKELDEETC 291  
 QY 255 -----PALCGPH-----MMFDEDRCEVCCKTPCKDOL 281  
 Db 292 QCVCRAGLRPASCGRPHKELDRNSCQCCKVKNKLPFPOGGANREDENTCCVCCKRTCPRNQ 351  
 QY 282 IQHPKNCSECKESLETCCQKHKLFPDTCSCDCRCPFHTRPCASGKTACAKHCRFPKE 341  
 Db 352 PLNPGKACAC-ECTESPQKCLLKGKFFHQTCS-----YRRPCTNRQACACEPGFSYSEE 404

Search completed: May 16, 2000, 15:27:04

Job time: 10484 sec

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GenCore version 4.5  
Copyright (c) 1993 - 2000 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: May 16, 2000, 14:52:16 ; Search time 49.04 Seconds  
(without alignments)  
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Title: US-09-214-982-1  
 Perfect score: 1963  
 Sequence: 1 MYRENVVVNVFMMLYVLVQ.....HCRFPKPKRAAQGPHSRKNP 354

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 225878 seqs, 69334122 residues

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0

Maximum DB seq length: 1000000

Post-processing: Minimum Match 0%  
Listing first 45 summaries

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Database :
SPTREMBL_12.*
1: sp_archaea.*
2: sp_bacteria.*
3: sp_fungi.*
4: sp_human.*
5: sp_invertebrate.*
6: sp_mammal.*
7: sp_mhc.*
8: sp_organelle.*
9: sp_phase.*
10: sp_plant.*
11: sp_rodent.*
12: sp_virus.*
13: sp_vertebrate.*
14: sp_unclassified.*
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## SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	1963	100.0	354	4	043915	O43915 homo sapien
2	1675	85.3	358	11	P97946	P97946 mus musculus
3	1517.5	77.3	326	11	O35251	O35251 rattus norv
4	692	35.3	418	13	O57352	O57352 coturnix co
5	682.5	34.8	420	6	O9XS50	O9XS50 bos taurus
6	287	14.6	126	11	O35757	O35757 rattus norv
7	204	10.4	254	4	Q16889	Q16889 homo sapien
8	201	10.2	190	6	Q77643	Q77643 ovis aries
9	201	10.2	209	4	O60720	O60720 homo sapien
10	199	10.1	190	6	O9XSf3	O9XSf3 canis famli
11	198.5	10.1	194	13	O42572	O42572 xenopus lae
12	198.5	10.1	1704	5	O94446	O94446 chironomus
13	196	10.0	208	6	O9XSf4	O9XSf4 canis famli
14	195	9.9	191	4	O75875	O75875 homo sapien
15	191	9.7	214	6	O9XSf5	O9XSf5 canis famli
16	181.5	9.2	1698	5	O94438	O94438 chironomus
17	179.5	9.1	188	6	O9XS48	O9XS48 bos taurus
18	166.5	8.5	150	11	O54881	O54881 rattus norv
19	163.5	8.3	148	13	O42571	O42571 xenopus lae
20	163.5	8.3	188	13	O73682	O73682 brachydactyl

Q9ymf3 orf virus.  
Q9xs47 bos taurus  
Q29613 felis silve  
Q9y6s8 homo sapien  
Q63434 rattus norv  
Q70123 mus musculu  
Q89811 rattus norv  
Q64290 mus musculu  
Q9xs48 bos taurus  
Q16528 homo sapien  
Q73822 brachydania  
Q95549 mycoplasma  
Q97500 cryotolaqus  
Q15354 homo sapien  
Q10741 bos taurus  
Q18843 cryotolaqus  
Q17457 trichoderma  
Q19857 caenorhabdi  
Q35495 rattus norv  
Q35598 mus musculu  
Q9y0z5 drosophila  
Q9wqz7 mesocricetu  
Q62040 mus musculu  
Q35442 mus musculu  
Q88839 mus musculu

## ALIGNMENTS

RESULT	1	
ID	043915	PRELIMINARY; PRT; 354 AA.
AC	043915;	
DT	01-JUN-1998 (TREMBLrel. 06, Created)	
DC	01-JUN-1998 (TREMBLrel. 06, Last sequence update)	
DT	01-NOV-1999 (TREMBLrel. 12, Last annotation update)	
DE	GROWTH FACTOR FIGF.	
GN	FIGF OR VEGF-D.	
OS	Homo sapiens (Human).	
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;	
OC	Eutheria; Primates; Catarrhini; Homnidae; Homo.	
RP	[1]	
RP	SEQUENCE FROM N.A.	
RX	MEDLINE; 98140120.	
RA	ROSSICIGIANI M., LESTINGI M., LUDDI A., ORLANDINI M., FRANCO B.,	
RA	ROSSI E., BALLABIO A., ZUFFARDI O., OLIVIERO S.;	
RT	"Human FIGF: cloning, gene structure, and mapping to chromosome Xp22.1	
RT	between the FIGA and the GRPR genes.";	
RL	Genomics, 42:207-216(1998).	
RN	[2]	
RN	SEQUENCE FROM N.A.	
RC	TISSUE=LUNG;	
RX	MEDLINE; 97349118.	
RA	YAMADA Y., NEZU J., SHIMANE M., HIRATA Y.;	
RT	"Molecular cloning of a novel vascular endothelial growth factor,	
RT	VEGF-D.";	
RL	Genomics, 42:483-488(1997).	
RN	[3]	
RN	SEQUENCE FROM N.A.	
RX	MEDLINE; 98118549.	
RA	ACHEN M.G., JELTSCH M., KUKK E., MAEKINEN T., VITALI A., WILKS A.F.,	
RA	ALITALO K., STACKER S.A.;	
RT	"Vascular endothelial growth factor D (VEGF-D) is a ligand for the	
RT	tyrosine kinases VEGF receptor 2 (Flk1) and VEGF receptor 3 (Flt4).";	
RL	Proc. Natl. Acad. Sci. U.S.A., 95:548-553(1998).	
DR	EMBL; Y12864; CAA73371.1; JOINED.	
DR	EMBL; Y12865; CAA73371.1; JOINED.	
DR	EMBL; Y12866; CAA73371.1; JOINED.	
DR	EMBL; Y12867; CAA73371.1; JOINED.	
DR	EMBL; Y12868; CAA73371.1; JOINED.	
DR	EMBL; Y12869; CAA73371.1; JOINED.	
DR	EMBL; Y12870; CAA73371.1; JOINED.	

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DR EMBL; D89630; BAA24264.1; -.
DR EMBL; AJ000185; CAA03942.1; -.
DR EMBL; Y12863; CAA73370.1; -.
DR HSSP; P15692; IYPP; 1.
DR PROSITE; PS00249; PDGF; 1.
DR PFAM; PF00341; PDGF; 1.
SQ SEQUENCE 354 AA; 40444 MW; 310D8150 CRC32;

Query Match      100.0%; Score 1963; DB 4; Length 354;
Best Local Similarity 100.0%; Pred. No. 1.8e-175;
Matches 354; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MYREWVVVFMVLYVOLVQSSNEHGPVK-----RSSQSTLRSERQQIRAAASLELLR 60
DB 1 MYREWVVVFMVLYVOLVQSSNEHGPVK-----RSSQSTLRSERQQIRAAASLELLR 60
QY 61 DKWLWRCRLKLSFTSMDSRSASHRSTRFAATFYDIETLKVIDEWQRTQCSPRE 120
DB 61 DKWLWRCRLKLSFTSMDSRSASHRSTRFAATFYDIETLKVIDEWQRTQCSPRE 120
QY 121 ASELGKSTNTFFKPPCVNVFRCGGCCNEESLICMNTSYISKOLFELISVPLTSP 180
DB 121 ASELGKSTNTFFKPPCVNVFRCGGCCNEESLICMNTSYISKOLFELISVPLTSP 180
QY 181 VKVANHTGCKLPTAPRHPYSIIIRRSIQIPEDRCSSHKKLCPIDMLWDSNKCKVLQEE 240
DB 181 VKVANHTGCKLPTAPRHPYSIIIRRSIQIPEDRCSSHKKLCPIDMLWDSNKCKVLQEE 240
QY 241 NPLAGTEDHSHLQEPALCGPHMDFEDRCVCCKTPCKDLIHPKNCSCFECKESLTC 300
DB 241 NPLAGTEDHSHLQEPALCGPHMDFEDRCVCCKTPCKDLIHPKNCSCFECKESLTC 300
QY 301 CQKHKLFPDTCSCEDRCPPFTRPCASGKTACAKHCRFPKRAAQPHSRKNP 354
DB 301 CQKHKLFPDTCSCEDRCPPFTRPCASGKTACAKHCRFPKRAAQPHSRKNP 354

RESULT 2
P97946 ID P97946 PRELIMINARY; PRT; 358 AA.
AC P97946;
DT 01-MAY-1997 (TrEMBLrel. 03, Created)
DT 01-MAY-1997 (TrEMBLrel. 03, Last sequence update)
DT 01-NOV-1999 (TrEMBLrel. 12, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR D (C-FOS INDUCED GROWTH FACTOR).
GN VEGF-D OR FIGF.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J.
RX MEDLINE; 97030254.
RA ORDANINI M., MARCONINI L., FERRUZZI R., OLIVIERO S.;
RT "Identification of a c-fos-induced gene that is related to the
RT platelet-derived growth factor/vascular endothelial growth factor
RT family.";
RL Proc. Natl. Acad. Sci. U.S.A. 93:11675-11675(1996).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=LUNG;
RX MEDLINE; 97349118.
RA YAMADA Y., NEZU J., SHIMANE M., HIRATA Y.;
RT "Molecular cloning of a novel vascular endothelial growth factor,
RT VEGF-D.";
RL Genomics 42:483-488(1997).
DR EMBL; X99572; CAA67892.1; -.
DR EMBL; D89628; BAA14002.1; -.
DR HSSP; P15692; IYPP.
DR MGD; MGI:108037; Figf.
DR PROSITE; PS00249; PDGF; 1.
DR PFAM; PF00341; PDGF; 1.
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SQ SEQUENCE 358 AA; 40908 MW; 64E6B4E9 CRC32;

Query Match      85.3%; Score 1675; DB 11; Length 358;
Best Local Similarity 83.8%; Pred. No. 1.3e-148;
Matches 301; Conservative 20; Mismatches 32; Indels 6; Gaps 2;

QY 1 MYREWVVVFMVLYVOLVQSSNEHGPVK-----RSSQSTLRSERQQIRAAASLELLR 55
DB 1 MYEGWNGNTLMFHYLVQGFSEHGPVKDFSEFSSRSMLERSERQQIRAAASLELLQ 60
QY 56 ITHSEDWKLWRCRLKLSFTSMDSRSASHRSTRFAATFYDIETLKVIDEWQRTQCSPRE 115
DB 61 IAHSEDWKLWRCRLKLSFTSMDSRSASHRSTRFAATFYDIETLKVIDEWQRTQCSPRE 120
QY 116 TCVEVASELGKSTNTFFKPPCVNVFRCGGCCNEESLICMNTSYISKOLFELISVPLTSV 175
DB 121 TCVEVASELGKSTNTFFKPPCVNVFRCGGCCNEESLICMNTSYISKOLFELISVPLTSV 180
QY 176 PELVPVKVANHTGCKLPTAPRHPYSIIIRRSIQIPEDRCSSHKKLCPIDMLWDSNKCKC 235
DB 181 PELVPVKIANHTGCKLPTGPRHPYSIIIRRSIQIPEDRCSSHKKLCPIDMLWDSNKCKC 240
QY 236 VLQEEENPLAGTEDHSHLQEPALCGPHMDFEDRCVCCKTPCKDLIHPKNCSCFECKE 295
DB 241 VLQDETPLPGTEDHSHLQEPALCGPHMDFEDRCVCCKTPCKDLIHPKNCSCFECKE 300
QY 296 SLETCQKHKLFPDTCSCEDRCPPFTRPCASGKTACAKHCRFPKRAAQPHSRKNP 354
DB 301 SLESCQKHKLFPDTCSCEDRCPPFTRPCASGKTACAKHCRFPKRAAQPHSRKNP 358

RESULT 3
Q35251 ID Q35251 PRELIMINARY; PRT; 326 AA.
AC Q35251;
DT 01-JAN-1998 (TrEMBLrel. 05, Created)
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT 01-NOV-1999 (TrEMBLrel. 12, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR D.
GN VEGF-D.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=SPRAGUE DAWLEY;
RX MEDLINE; 97349118.
RA YAMADA Y., NEZU J., SHIMANE M., HIRATA Y.;
RT "Molecular cloning of a novel vascular endothelial growth factor,
RT VEGF-D.";
RL Genomics 42:483-488(1997).
DR EMBL; AF014827; AAB66557.1; -.
DR HSSP; P15692; IYPP.
DR PROSITE; PS00249; PDGF; 1.
DR PFAM; PF00341; PDGF; 1.
SQ SEQUENCE 326 AA; 37112 MW; B30608D3 CRC32;

Query Match      77.3%; Score 1517.5; DB 11; Length 326;
Best Local Similarity 85.2%; Pred. No. 5.8e-134;
Matches 270; Conservative 20; Mismatches 22; Indels 5; Gaps 1;

QY 1 MYREWVVVFMVLYVOLVQSSNEHGPVK-----RSSQSTLRSERQQIRAAASLELLR 55
DB 1 MYCEAWAVNLMSYVLYVQGSIEHRAVKDVSRLRSVLSERSEQIRAAASLELLQ 60
QY 56 ITHSEDWKLWRCRLKLSFTSMDSRSASHRSTRFAATFYDIETLKVIDEWQRTQCSPRE 115
DB 61 VAHSEDWKLWRCRLKLSFTSMDSRSASHRSTRFAATFYDIETLKVIDEWQRTQCSPRE 120
QY 116 TCVEVASELGKSTNTFFKPPCVNVFRCGGCCNEESLICMNTSYISKOLFELISVPLTSV 175
DB 116 TCVEVASELGKSTNTFFKPPCVNVFRCGGCCNEESLICMNTSYISKOLFELISVPLTSV 175
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Db 121 TCVEASELGGTNTTFFKPPCVNVFRGCGCCNEESVMCMNTSTSYISKQLFEISVPLTSV 180
QY 176 PELVPVKVANHGTCKCLPTAPRHPYSIIIRSIQIPEDRCSHSHKLCPLDMLWDSNKKC 235
Db 181 PELVPVKVIANHTGCKCLPTGPRHPYSIIIRSIQIPEDCQPHSKKLCPLDMLWDTNKKC 240
QY 236 VLQENPLAGTSHLQEPALCGPHMFMFDEDCRCVCKTQCPKDLTIQHPKNGSCFECKE 295
Db 241 VLQENPLPCTGSHVLYQEPALCGPHMFMFDEDCRCVCKRACPCGDLTIQHPNGSCFECKE 300
QY 296 SLETCCQKHKLFPDTC 312
Db 301 SLESCCQKHKLFPDTC 317

RESULT 4
ID 057352 PRELIMINARY; PRT; 418 AA.
AC 057352;
DT 01-JUN-1998 (TREMBLrel. 06, Created)
DT 01-JUN-1998 (TREMBLrel. 06, Last sequence update)
DT 01-NOV-1999 (TREMBLrel. 12, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
GN VEGF-C.
OS Coturnix coturnix japonica (Japanese quail).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Archosauria; Aves;
OC Neognathae; Galliformes; Phasianidae; Phasianinae; Coturnix.
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE; 98167900.
RA EICHMANN A., CORBEL C., JAFFREDO T., BREANT V., JOUKOV V., KUMAR V.,
RA ALITALO K., LE DOUARIN N.M.;
RT "Avian VEGF-C: cloning, embryonic expression pattern and stimulation
RT of the differentiation of VEGFR2-expressing endothelial cell
RT precursors.";
RL Development 125:743-752(1998).
DR EMBL; Y15837; CAA75799.1; -.
DR HSP; P15692; IVP.
DR PROSITE; PS00249; PDGF; 1.
DR PFAM; PF00341; PDGF; 1.
DR PRINTS; PR00438; GFCYSKNOT.
KW Signal.
FT SIGNAL 1 31 POTENTIAL.
FT CHAIN 111 418 VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ SEQUENCE 418 AA; 46839 MW; B7862854 CRC32;

Query Match 35.3%; Score 692; DB 13; Length 418;
Best Local Similarity 39.4%; Pred. No. 7.6e-57;
Matches 140; Conservative 52; Mismatches 101; Indels 62; Gaps 9;

QY 41 EQQIRASSLEELLRTHSEDWKLWCRRL-----KSTSDMSRSASHRSTRFAATFY 94
Db 56 EEQLRSVSSVDELMTVLYPEYWKYKQLRGKGWQHNRHSHSDTSDD--SLKFAAAHY 113
QY 95 DITLKVDEWORTQCSRETQCVASELGSKTNTFFKPPCVNVFRGCGCCNEESLIM 154
Db 114 NAEILKSIDTEWRTQCPREVCDVGKEGATNTFFKPPCVSVIYRCGCGCCNSEGLQCM 173
QY 155 NTSTSYISKQLFEISVPLTSVPELVVKVANHGTCKCLPTAP--RHPYSIIIRSIQIPEE 212
Db 174 NISTNYISKTLFEITVPLSHGPKPVTVSFANHTSCRCMSKLDVYRQVHSIIIRSLP-ATQ 232
QY 213 DRCSHKKLCPIDMLWDSNKKCVLQEE---NPLAGTED----- 249
Db 233 TOCHVANKTPKKNVNNQICRCLAQHDFFSFLGSDTSEGFHICGPNKELDEETCCQ 292
QY 249 -----HSHLQE-----PALCGPHMFMFDEDCRCVCKTQCPKDLIQ 283
Db 293 VCKGGVPTSCGPHKELDRASOCMKNLPLSSCGPNKEFDEEKQCVCCKTQCPKHPL 352
QY 284 HPKNCSCFECKESLETCCQKHKLFPDTCSC-EDRCPFFHTRPCASGKTACAKHCR 337

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Db 353 NPAKCIC-ECTESPNCFLKGRFHHQTCSCYRPPCTVTRTKRCDAGFLLAEVCR 406

RESULT 5
ID 09XS50 PRELIMINARY; PRT; 420 AA.
AC 09XS50;
DT 01-NOV-1999 (TREMBLrel. 12, Created)
DT 01-NOV-1999 (TREMBLrel. 12, Last sequence update)
DT 01-NOV-1999 (TREMBLrel. 12, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; Bovidae;
OC Bovinae; Bos.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=HEART;
RA LIU X., YONEKURA H., YAMAGISHI S., YAMAMOTO Y., YAMAMOTO H.;
RT "Structure and expression of bovine VEGF family.";
RL Submitted (MAY-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB004275; BAA77687.1; -.
DR PROSITE; PS00249; PDGF; 1.
KW Signal.
FT SIGNAL 1 20 POTENTIAL.
FT CHAIN 21 420 VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ SEQUENCE 420 AA; 46681 MW; 918E357F CRC32;

Query Match 34.8%; Score 682.5; DB 6; Length 420;
Best Local Similarity 37.7%; Pred. No. 5.9e-56;
Matches 133; Conservative 60; Mismatches 89; Indels 71; Gaps 10;

QY 41 EQQIRASSLEELLRTHSEDWKLWCRRLKLSFTSDMSRSASHRST----RPAATFYDI 96
Db 58 EEQLRSVSSVDELMTVLYPEYWKYKQLRGKGWQHNRHSHSDTSDD--SLKFAAAHYNT 117
QY 97 ETLKVDEWORTQCSRETQCVASELGSKTNTFFKPPCVNVFRGCGCCNEESLIMNT 156
Db 118 EILRSIDNEWRTQCPREVCDVGKEGATNTFFKPPCVSVIYRCGCGCCNSEGQQCMNT 177
QY 157 STSYISKQLFEISVPLTSVPELVVKVANHGTCKCLPTAP--RHPYSIIIRSI--QIPEE 212
Db 178 STSYLSKTLFEITVPLSQGPKVTISFANHTSCRCMSKLDVYRQVHSIIIRSLPALPQ- 237
QY 213 DRCSHKKLCPIDMLWDSNKKCVLQEE---NPLAGTED----- 249
Db 237 --CQAANKTCPADYIWNHVCRCCLAQHDFFSFGSDSADGFDHICGPNKELDEETCCQ 294
QY 249 -----HSHLQE-----PALCGPHMFMFDEDCRCVCKTQCPKDLIQ 283
Db 295 VCKGGVPTSCGPHKELDRSDCVCCKNLKLPSSCGANREFDENTCQICCKTQCPKNOPL 354
QY 284 HPKNCSCFECKESLETCCQKHKLFPDTCSCDRCPFFHTRPCASGKTACAKHC 336
Db 355 NPKCAC-ECTENPQCKFLGKFKQHTCSC-----YRPPC-----TNRVYKHC 396

RESULT 6
ID 035757 PRELIMINARY; PRT; 126 AA.
AC 035757;
DT 01-JAN-1998 (TREMBLrel. 05, Created)
DT 01-JAN-1998 (TREMBLrel. 05, Last sequence update)
DT 01-NOV-1999 (TREMBLrel. 12, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C (FRAGMENT).
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
OC Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=SPRAGUE-DAWLEY; TISSUE=LUNG;
RA MANDRIOTA S.J., PEPPER M.S.;

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RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AF010302; AAB63248.1; -  
 DR HSP; P15692; 2VPF.  
 FT NON\_TER 1  
 FT NON\_TER 126 126  
 SQ SEQUENCE 126 AA; 13977 MW; DC008358 CRC32;

Query Match 14.6%; Score 287; DB 11; Length 126;  
 Best Local Similarity 44.2%; Pred. No. 1.3e-19;  
 Matches 57; Conservative 24; Mismatches 40; Indels 8; Gaps 4;

QY 137 VNVRCGCCNNEESLTCMTSTSYISKQFISVPLTSVPVVKVANHTGCKCLPTAP 196  
 Db 1 VSVYRCGCCNNEESLTCMTSTSYISKQFISVPLTSVPVVKVANHTGCKCLPTAP 196  
 QY 197 --RHPYSIIRRSI--OIPEDRCSSKSLCPIDMLWDSNCKVCVQLENPL-AGTEDSH 251  
 Db 61 VYRQVHSIIRRSIPLTPQ--CQANKTCPANYVNNYMCQCLAQODFIYSNVEDDS 117  
 QY 252 LQEPALCGP 260  
 Db 118 NGFHDVCGP 126

RESULT 7  
 Q16889  
 ID Q16889 PRELIMINARY; PRT; 254 AA.  
 AC Q16889;  
 DT 01-NOV-1996 (Tremblrel. 01, Created)  
 DT 01-NOV-1998 (Tremblrel. 08, Last sequence update)  
 DT 01-NOV-1999 (Tremblrel. 12, Last annotation update)  
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR (FRAGMENT).  
 GN VEGF 206.  
 OS Homo sapiens (Human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 OC Eutheria; Primates; Catarrhini; Hominidae; Homo.  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE; 92168017.  
 RA HOUCK K.A., FERRARA N., WINER J., CACHIANES G., LI B., LEUNG D.W.;  
 RT "The vascular endothelial growth factor family: identification of a  
 RT fourth molecular species and characterization of alternative splicing  
 RT of RNA."  
 RL Mol. Endocrinol. 5:1806-1814(1991).  
 DR EMBL; S85192; AAC63102.1;  
 DR EMBL; S85224; AAC63101.1;  
 DR EMBL; S85199; AAC63101.1; JOINED.  
 DR EMBL; S85201; AAC63101.1; JOINED.  
 DR EMBL; S85219; AAC63101.1; JOINED.  
 DR EMBL; S85222; AAC63101.1; JOINED.  
 DR HSP; P15692; 2VPF.  
 DR PROSITE; PS00249; PDGF; 1.  
 DR PFAM; PF00341; PDGF; 1.  
 FT NON\_TER 1  
 SQ SEQUENCE 254 AA; 29461 MW; DC203C10 CRC32;

Query Match 10.4%; Score 204; DB 4; Length 254;  
 Best Local Similarity 23.6%; Pred. No. 1.5e-11;  
 Matches 70; Conservative 31; Mismatches 106; Indels 90; Gaps 11;

QY 45 RAASLEELRITHSEDKWLRCLRLLKSFYSMDRSRA-----SHRSTRFAATFYDI 96  
 Db 18 RASETMNLF-----SWVHSLALLLYLHAKWSQAAPMAEGGQNH----- 61  
 QY 97 ETLKVIDEOWRTQSPRETCEVASELKGSTNTFFKPPCVNVFRGCCNNEESLTCMT 156  
 Db 61 EVVKFMD-VYQSYCHPTELVDIFQEPDIEIFKPPCVPLMRGCCNDEGLECVPT 119  
 QY 157 STSYISKQFISVPLTSVP-----ELVPVKVANHTGCKCLPTAPRHPYSIIRSIQIPEE 212  
 Db 120 ESNITMQIMRIK-----PHQGRIHGMFLQHNKCEC-----PKR 156

QY 213 DRCSHKKLCPIDMLWDSNK-----CKCVLEENPLAGTEDHSHLQEPALC 258  
 Db 157 DRARQEKRSVRGKGQKRRKRSRYKSWSVYVGARCLMPWS-----LPGPHPC 206  
 QY 259 GPHMMFDEDRCEVCVCKTPCPKDLIQHPKNCSCFECKESLETCCQKHKLPHDPDTCSE 315  
 Db 207 GP-----CSERRKHLFVQDPQCKC--SCNTDSRCKAROLELNERTCRCD 250

RESULT 8  
 O77643  
 ID O77643 PRELIMINARY; PRT; 190 AA.  
 AC O77643;  
 DT 01-NOV-1998 (Tremblrel. 08, Created)  
 DT 01-NOV-1998 (Tremblrel. 08, Last sequence update)  
 DT 01-NOV-1999 (Tremblrel. 12, Last annotation update)  
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR.  
 GN VEGF.  
 OS Ovis aries (Sheep).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 OC Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; Bovidae;  
 OC Caprinae; Ovis.  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN-COLUMBIA-RAMBOULLIET;  
 RA CHEUNG C.Y., BRACE R.A.;  
 RT "Ovine vascular endothelial growth factor: Nucleotide sequence and  
 RT expression in fetal tissues."  
 RL Growth Factors 0:0-0(1998).  
 DR EMBL; AF071015; AAC23608.1;  
 DR HSP; P15692; 2VGH.  
 DR PROSITE; PS00249; PDGF; 1.  
 DR PFAM; PF00341; PDGF; 1.  
 SQ SEQUENCE 190 AA; 22342 MW; ACAF3FAP CRC32;

Query Match 10.2%; Score 201; DB 6; Length 190;  
 Best Local Similarity 25.4%; Pred. No. 2.1e-11;  
 Matches 57; Conservative 21; Mismatches 66; Indels 80; Gaps 8;

QY 97 ETLKVIDEOWRTQSPRETCEVASELKGSTNTFFKPPCVNVFRGCCNNEESLTCMT 156  
 Db 38 EVVKFMD-VYQSYCHPTELVDIFQEPDIEIFKPPCVPLMRGCCNDEGLECVPT 96  
 QY 157 STSYISKQFISVPLTSVPVVKVANHTGCKCLPTAPRHPYSIIRSIQIPEEDRCS 216  
 Db 97 EEFNITMQIMRIK-----PHQSQH-----IGEMSFLQ 123  
 QY 217 HSKKLCPIDMLWDSNCKC-----VLQENPLAGTEDHSHLQEPALCGPHMFDRCRC 271  
 Db 124 H-----NKCECRPKDKARQENP-----CGP----- 145  
 QY 272 VKYTPCPKDLIQHPKNCSCFECKESLETCCQKHKLPHDPDTCSE 315  
 Db 145 -CSERRKHLFVQDPQCKC--SCNTDSRCKAROLELNERTCRCD 186

RESULT 9  
 O60720  
 ID O60720 PRELIMINARY; PRT; 209 AA.  
 AC O60720;  
 DT 01-AUG-1998 (Tremblrel. 07, Created)  
 DT 01-MAY-1999 (Tremblrel. 10, Last sequence update)  
 DT 01-NOV-1999 (Tremblrel. 12, Last annotation update)  
 DE VEGF183 PROTEIN PRECURSOR (VASCULAR ENDOTHELIAL GROWTH FACTOR 183).  
 GN VEGF.  
 OS Homo sapiens (Human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 OC Eutheria; Primates; Catarrhini; Hominidae; Homo.  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE-KIDNEY;

GenCore version 4.5  
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OM protein - protein search, using sw model

Run on: May 16, 2000, 14:35:17 ; Search time 48.21 seconds  
(without alignments)  
430.511 Million cell updates/sec

Title: US-09-214-982-1

Perfect score: 1963

Sequence: 1 MYREWVVVNFMLYVLVQ.....HCRFPKRAAQPHSRKNP 354

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 168808 seqs, 58629743 residues

Total number of hits satisfying chosen parameters: 168808

Minimum DB seq length: 0

Maximum DB seq length: 1000000

Post-processing: Minimum Match 0%

Listing first 45 summaries

Database :

PIR\_63: \*  
1: pir1: \*  
2: pir2: \*  
3: pir3: \*  
4: pir4: \*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	704.5	35.9	419	2 S69207	vascular endotheli
2	200.5	10.2	232	2 A41551	vascular endotheli
3	200	10.2	190	2 B40080	vascular endotheli
4	198	10.1	190	2 S52130	vascular endotheli
5	198	10.1	190	2 B44881	vascular endotheli
6	198	10.1	214	2 A44881	vascular endotheli
7	194	9.9	190	2 A35987	glioma-derived vas
8	181.5	9.2	1700	2 S08167	Balbani ring 3 pr
9	176.5	9.0	188	2 JC4680	vascular endotheli
10	167.5	8.5	146	2 S57956	ovine vascular end
11	166.5	8.5	120	2 A33787	vascular endotheli
12	164	8.4	148	2 D49530	16K vascular endot
13	161	8.2	245	1 TVCTSS	platelet-derived g
14	160.5	8.2	149	2 A41236	placental growth f
15	158	8.0	158	2 A56125	placental growth f
16	147.5	7.5	207	2 JC4679	vascular endotheli
17	145	7.4	133	2 B49530	vascular endotheli
18	145	7.4	241	1 PFHUG2	platelet-derived g
19	139.5	7.1	1187	2 T18355	hypothetical prote
20	135	6.9	230	2 A55030	platelet-derived g
21	135	6.9	241	1 PFMSGB	platelet-derived g
22	133.5	6.8	225	2 S25097	platelet-derived g
23	133	6.8	185	2 S58383	hypothetical prote
24	128	6.5	748	2 S66129	disintegrin (EC 3.
25	126	6.4	161	2 T18108	platelet-derived g
26	125.5	6.4	196	2 B28964	platelet-derived g
27	125.5	6.4	211	1 PFHUG1	platelet-derived g
28	125	6.4	2946	2 T15840	hypothetical prote
29	122	6.2	226	1 TVMVSS	PDGF-related trans
30	120.5	6.1	160	2 JQ0542	185K secretory pro

RESULT 1  
S69207  
vascular endothelial growth factor C precursor - human  
N:Alternate names: FLT4 ligand DHM  
C:Species: Homo sapiens (man)  
C:Date: 27-Apr-1996 #sequence\_revision 01-Nov-1996 #text\_change 08-Oct-1999  
C:Accession: S69207; S61795; S71443; S69208; G02659  
R:Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kuk, E.; Saksel  
EMBO J. 15, 1751, 1996  
A:Title: Corrigendum: A novel vascular endothelial growth factor, VEGF-C, is a ligand  
A:Reference number: S69207; MUID:96203094  
A:Accession: S69207  
A:Status: nucleic acid sequence not shown  
A:Molecule type: mRNA  
A:Residues: 1-419 <JOU>  
A:Cross-references: EMBL:X94216; NID:g1177488; PIDN:CAA63907.1; PID:e221096; PID:g118  
A:Note: the nucleotide sequence was submitted to the EMBL Data Library, December 1995  
A:Note: only a part of the translation is shown  
A:Note: this is a revision to the sequence from reference S61795  
R:Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kuk, E.; Saksel  
EMBO J. 15, 290-298, 1996  
A:Title: A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4  
A:Reference number: S61795; MUID:96178224  
A:Accession: S61795  
A:Status: nucleic acid sequence not shown; not compared with conceptual translation  
A:Molecule type: mRNA  
A:Residues: 70-419 <JOU>  
A:Note: this sequence has been revised in reference S69207  
A:Accession: S71443  
A:Molecule type: protein  
A:Residues: X'104-120 <JOU2>  
R:Lee, J.; Gray, A.; Yuan, J.; Luoh, S.M.; Avraham, H.; Wood, W.I.  
submitted to the EMBL Data Library, December 1995  
A:Description: Vascular endothelial growth factor related protein (VRP): A ligand and  
A:Reference number: S69208  
A:Accession: S69208  
A:Molecule type: mRNA  
A:Residues: 1-419 <LEE>  
A:Cross-references: EMBL:U43142; NID:g1150988; PIDN:AAA85214.1; PID:g1150989  
R:Morris, J.C.  
submitted to the EMBL Data Library, May 1996  
A:Reference number: H01557  
A:Accession: G02659  
A:Status: preliminary; translated from GB/EMBL/DDBJ  
A:Molecule type: mRNA  
A:Residues: 1-419 <MOR>  
A:Cross-references: EMBL:U58111; NID:g1373426; PIDN:AAB02909.1; PID:g1373427  
C:Genetics:  
A:Gene: GDB:VEGFC; VRP  
A:Cross-references: GDB:3890883; OMIM:601528  
F;1-12/Domain: signal sequence #status predicted <SIG>  
F;13-102/Domain: propeptide #status predicted <PRO>  
F;103-419/Product: vascular endothelial growth factor C #status experimental <MAT>

ALIGNMENTS

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Query Match          35.9%; Score 704.5; DB 2; Length 419;
Best Local Similarity 38.9%; Pred. No. 1.9e-45;
Matches 140; Conservative 61; Mismatches 88; Indels 71; Gaps 11;

QY   41 EQQIRAAASLEELRLTHSEDKWLNCRURL-----KSFSTMSDSRSASHRSTFAATFY 94
    Db 57 EQLRSVSSVDLMTVLVPEYWKMKCOLRGKGQHNEQANLSNR--TEETIKFAAAHY 114

QY   95 DIETLKVIDEQRQTQSPRETCEVASSELGKSTNTFFKPPCVNVFRCGGCCNESLICM 154
    Db 115 NTEILKSIDNWRKTQCPREVCIDVGKEFGVATNTFFPKFCVSIVYRCGCCNSEGLQCM 174

QY   155 NTSTSYISKOLFEISVPLTSPVELVPVKVANHTGCKCLUPTAP--RHPYSIIIRSI--QIP 210
    Db 175 NTSTSYLSKTLFEITVPLUSQGPKPVTISFANHTRCSCMSKLDTVYRVHSHIIRSLPATLP 234

QY   211 EDRCRSHSKKLCPIDMLWSNKRCVQLQE-----ENPLACTED---HSHLOE--- 255
    Db 235 Q---COAANKTCPTNYMWNHHICRLAQEDPFMSDDAGDSDTGFDHICGPNKELDEETC 291

QY   255 -----PALCGPH-----MMFDEDCRCVCVKPCPKDL 281
    Db 292 QCVCRAGRPASCOPGHKELDNRNSQCVCYNKLFPSQCGANREFDENTCQCVCRTCPRNQ 351

QY   282 IOHPKNCSCFEKESLETCCQKHKLFPDTCSCDRCPPEHTRPCASCGTKACAKHFPPKE 341
    Db 352 PLNPGKAC-ECTESPQCKLLKKGFHQTCSC-----YRRFCTNNKQACEPGFSYSEE 404

RESULT      2
A41551
vascular endothelial growth factor 206 precursor - human
N:Alternate names: vascular permeability factor
N:Contains: vascular endothelial growth factor 121 (VEGF 121); VEGF 189; VEGF
C:Species: Homo sapiens (man)
C>Date: 28-Aug-1992 #sequence_revision 28-Aug-1992 #text_change 05-Nov-1999
C:Accession: A41551; B41551; A40454; B40454; A40079; A40080; JQ1463; JQ1
R:Houck, K.A.; Ferrara, N.; Winer, J.; Cachianes, G.; Li, B.; Leung, D.W.
Mol. Endocrinol. 5, 1806-1814, 1991
A>Title: The vascular endothelial growth factor family: identification of a fourth mole
A:Reference number: A41551; MOID:92168017
A:Accession: A41551
A:Molecule type: mRNA
A:Residues: 1-232 <HOUI>
A:Cross-references: GB:S85192; NID:g246155; PID:g246156
A:Accession: C41551
A>Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-140,'N',183-232 <HOU2>
A:Accession: B41551
A>Status: nucleic acid sequence not shown; not compared with conceptual translation
A:Molecule type: mRNA
A:Residues: 1-141,227-232 <HOU>
R:Tischer, E.; Mitchell, R.; Hartman, T.; Silva, M.; Gospodarowicz, D.; Fiddes, J.C.; AH
J. Biol. Chem. 266, 11947-11954, 1991
A>Title: The human gene for vascular endothelial growth factor. Multiple protein forms a
A:Reference number: A40454; MOID:91268072
A:Accession: A40454
A:Molecule type: DNA
A:Residues: 1-165,183-232 <TI1>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63976; GE
A:Accession: B40454
A:Molecule type: DNA
A:Residues: 1-140,'N',183-232 <TI>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63977; GE
A:Accession: C40454
A:Molecule type: DNA
A:Residues: 1-141,227-232 <TI>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63978
R:Kock, P.J.; Hauser, S.D.; Krivi, G.; Sanzo, K.; Warren, T.; Feder, J.; Connolly, D.T.
Science 246, 1309-1312, 1989

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Best Local Similarity 24.2%; Pred. No. 5.1e-08;
Matches 54; Conservative 24; Mismatches 67; Indels 78; Gaps 8;

QY 97 ETLKVIDEEWQRTQCSPRETCVEVASELGRKSTNFFKPPCVNVFRCGCCNEESLICMNT 156
   | : | : ||| : ||| | : | : | : | : | : | : | : | : | : | : | : | : |
Db 38 EVVKFMD-VYQRSYCRPIETLVDIFOEYDPDEIEYIFKPSCVPLMRCGCCNDEGLECVPT 96
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |

QY 157 STSYISKOLFEISVPLTSVP-----ELVPVKVANHTGCKCLPTAPRHPYSIIRSIQIPEE 212
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 97 EEFNITWQIMRIK-----PHQGQHIGEMSFLOHNKCECR-----PKK 133
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |

QY 213 DRCSSHKKLCPIDMLWDSNCKCVLQENPLAGTDESHLQEPALCGPHMFDRECEV 272
   ||| : ||| : ||| : ||| : ||| : ||| : ||| : ||| : ||| : ||| : ||| : |||
Db 134 DRA-----ROENP-----CGP----- 145

QY 273 CKTPCPRDLIQHPKNCSCFEKESLETCCOKHKLHFHPTQCSCE 315
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 145 CSERKKHLFVQDPQTKC-SCKWNTDSCKARQLELNERTCRD 186
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |

RESULT 5
B44881
vascular endothelial growth factor-1 precursor - mouse
C:Species: Mus musculus (house mouse)
C:Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 05-Nov-1999
C:Accession: B44881; A43351; A61029
R:Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
Development 114, 521-532, 1992
A:Title: Expression of vascular endothelial growth factor during embryonic angiogenesis
A:Reference number: A44881; MUID:92274860
A:Accession: B44881
A:Molecule type: mRNA
A:Residues: 1-190 <BRE>
A:Cross-references: GB:S38083; NID:g249858; PIDN:AAB22253.1; PID:g249859
A:Experimental source: embryo
A:Note: sequence extracted from NCBI backbone (NCBIN:107622, NCBIP:107623)
R:Claffey, K.P.; Wilkison, W.O.; Spiegelman, B.M.
J. Biol. Chem. 267, 16317-16322, 1992
A:Title: Vascular endothelial growth factor. Regulation by cell differentiation and
A:Reference number: A43351; MUID:92355593
A:Accession: A43351
A:Molecule type: mRNA
A:Residues: 1-116, 'ER', 119-190 <CIA>
A:Cross-references: GB:N95200; NID:g202350; PIDN:AAA04547.1; PID:g202351
A:Note: sequence extracted from NCBI backbone (NCBIN:110665, NCBIP:110675)
R:Rosenthal, R.A.; Megyesi, J.F.; Henzel, W.J.; Ferrara, N.; Folkman, J.
Growth Factors 4, 53-59, 1990
A:Title: Conditioned medium from mouse sarcoma 180 cells contains vascular endothelial
A:Reference number: A61029; MUID:91197543
A:Accession: A61029
A:Molecule type: protein
A:Residues: 27-38 <ROS>
C:Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; glycoprotein;

Query Match 10.1%; Score 198; DB 2; Length 190;
Best Local Similarity 22.6%; Pred. No. 5.1e-08;
Matches 60; Conservative 30; Mismatches 78; Indels 98; Gaps 10;

QY 62 WKLMRCRLR-----KSFMSDMSASHSRSTRFAATFYDIETLKVIDEEWQRTQCS 113
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 7 WWHWTLLALLYLHHAKWSQAPTTEGEQKSH-----EVKFM-D-VYQRSYCRP 53
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |

QY 114 RETCVEVASELGRKSTNFFKPPCVNVFRCGCCNEESLICMNTSTSYISKOLFEISVPLT 173
   ||| ||| : ||| ||| : ||| ||| : ||| ||| : ||| ||| : ||| ||| : ||| |||
Db 54 IETLVDIFOEYDPDEIEYIFKPSCVPLMRCGCCNDEALECVPTSESNTWQIMRIK-PHQ 112
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |

QY 174 SVPELVPKVANHTGCKCLPTAPRHPYSIIRRSIQIPEEDRCSHKKLCPIDMLWDSNKC 233
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 113 S-QHIGEMSFLOHSRCECR-----PKKDRTK----- 138

QY 234 KCVLQENPLAGTDESHLQEPALCGPHMFDRECEVCKTFCPKD-----LIQHPKNC 289
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |

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Db 138 -----PENHCE-----PCSERKHLFVQDPQTK 161
QY 290 CFECKESLETCCQKHLFHPDTCSE 315
Db 162 C-SCKNTDSRCKARQLELNERTCRCD 186

RESULT 6
A44881
N:Contains: vascular endothelial growth factor-3 precursor - mouse
C:Species: Mus musculus (house mouse)
C:Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 08-Oct-1999
C:Accession: A44881; C44881; A60932; S52136
R:Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
A:Title: Expression of vascular endothelial growth factor during embryonic angiogenesis
A:Reference number: A44881; MUID:92274860
A:Accession: A44881
A:Molecule type: mRNA
A:Residues: 1-214 <BRE>
A:Cross-references: GB:S37052; NID:g249856; PIDN:AAB22252.1; PID:g249857
A:Experimental source: embryo
A:Note: sequence extracted from NCBI backbone (NCBIN:104677, NCBIP:104678)
A:Accession: C44881
A:Molecule type: mRNA
A:Residues: 1-140,209-214 <BR2>
A:Cross-references: GB:S38100; NID:g249860; PIDN:AAB22254.1; PID:g249861
R:Clausen, M.; Gerlach, M.; Gerlach, H.; Brett, J.; Wang, F.; Familietti, P.C.; Pan, Y.C.
A:Title: Enhanced expression of multiple forms of VEGF is associated with spontaneous in
A:Reference number: S52136; MUID:95101726
A:Accession: S52136
A:Molecule type: protein
A:Status: preliminary
A:Comment: Homodimers could be demonstrated for recombinant VEGF-2 but not VEGF-3.
C:Keywords: alternative splicing; angiogenesis; disulfide bond; glycoprotein; homodimer;
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-214/Product: vascular endothelial growth factor-3 #status experimental <MAT>

Query Match 10.18; Score 198; DB 2; Length 214;
Best Local Similarity 23.7%; Pred. No. 5.7e-08;
Matches 63; Conservative 35; Mismatches 94; Indels 74; Gaps 11;
QY 62 WKLWRCRL-----KSFSDMSRSASHSTRFAATFYDIEPLKVIDEWMQTCSP 113
Db 7 WYHWTLALLYLHAKWSQAAPTEGEQKSH-----EVKFMQ-VYORSYCRP 53
QY 114 RETCVEASELGKSTNFFKPCPVNFRGCGCCNEESLCHMTSTSYISKOLFISVPLT 173
Db 54 IETLVDFQEVPEIEYIFKPCVPLMRCAGCCNDEALECVPTSESNITQIMRIK-PHQ 112
QY 174 SVPELVPVKVANTGCKLPTAPRHPYSIIRRSIQIPEEDRCSHKKLCPIDMLDSNRC 233
Db 113 S-QHIGEMFQLHSRCECR-----PKDRTPEKK-----SVRGKRG 149
QY 234 KCVLQENPLATEDSHLQEPALCGPHMFMDEDRCEVCVKTPCPKD-----LIQHPKNC 289
Db 150 OKRKKRSFKSWSVH-----CE-----PCSERKHLFVQDPQTK 185
QY 290 CFECKESLETCCQKHLFHPDTCSE 315
Db 162 C-SCKNTDSRCKARQLELNERTCRCD 210

Query Match 9.28; Score 181.5; DB 2; Length 1700;
Best Local Similarity 19.9%; Pred. No. 6.8e-06;
Matches 68; Conservative 43; Mismatches 105; Indels 125; Gaps 15;
QY 109 TCCSPRETCVEASELGKSTNFFKPCPVNFR-----CGGCCNEESLCHMTSTSYISK 163
Db 1073 FKCDKQKFIKSEKCECETQT-----QCKDGFWSNLECGCLCDDKK--CP-----GK 1119
QY 164 QLFETSVPLTSVPELVPVKVANH-----TGCKLPTAPRHPYSIIR-----SIQI 209
Db 1120 QVFDKNTCKCKCPNKPQDTCGNGKDFCLDCSKCKNPKPANGCTGVQEWNEKCOCEC 1179
QY 210 PEE-----DRCSHKKL-----CPIDML 227
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us-09-214-982-1.rpr

RESULT 7
A35987
glioma-derived vascular endothelial cell growth factor - rat
C:Species: Rattus norvegicus (Norway rat)
C:Date: 16-Nov-1990 #sequence_revision 16-Nov-1990 #text_change 05-Nov-1999
C:Accession: A35987
R:Conn, G.; Bayne, M.L.; Soderman, D.D.; Kwok, P.W.; Sullivan, K.A.; Palisi, T.M.; Ho
proc. Natl. Acad. Sci. U.S.A. 87, 2628-2632, 1990
A:Title: Amino acid and cDNA sequences of a vascular endothelial cell mitogen that is
A:Reference number: A35987; MUID:90207249
A:Accession: A35987
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-190 <CON>
A:Cross-references: GB:M32167; NID:g204287; PIDN:AAA41211.1; PID:g204288

Query Match 9.9%; Score 194; DB 2; Length 190;
Best Local Similarity 23.8%; Pred. No. 1e-07;
Matches 53; Conservative 27; Mismatches 65; Indels 78; Gaps 8;
QY 97 ETLKVIDEEMWQTCSPRETCVEASELGKSTNFFKPCPVNFRGCGCCNEESLCHMT 156
Db 38 EVVKFMD-VIQHSYCRPIETLVDFQEVPEIEYIFKPCVPLMRCAGCCNDEALECVPT 96
QY 157 STSYISKOLFETSVPLTSVPELVPVKVANTGCKLPTAPRHPYSIIRRSIQIPEEDRCS 216
Db 97 SESNVTMOIMRIK-PHOS-QHIGEMFQLHSRCECR-----PKKDRTK 137
QY 217 HSKKLCPLDMLWDSNCKCKVLQENPLATEDSHLQEPALCGPHMFMDEDRCEVCVKTP 276
Db 138 -----LIQHPKNCSCFECKESLETCCQKHLFHPDTCSE 315
QY 277 CPKD-----LIQHPKNCSCFECKESLETCCQKHLFHPDTCSE 315
Db 145 CSERRKHLFVQDPQTKC-SCKNTDSRCKARQLELNERTCRCD 186

RESULT 8
S08167
Baibani ring 3 protein - midge (Chironomus tentans)
C:Species: Chironomus tentans
C:Date: 30-Sep-1991 #sequence_revision 30-Sep-1991 #text_change 20-Mar-1998
C:Accession: S08167
R:Paulsson, G.; Lendahl, U.; Galli, J.; Ericsson, C.; Wieslander, L.
J. Mol. Biol. 211, 331-349, 1990
A:Title: The baibani ring 3 gene in Chironomus tentans has a diverged repetitive str
A:Reference number: S08167; MUID:90172404
A:Accession: S08167
A:Status: not compared with conceptual translation
A:Molecule type: DNA
A:Residues: 1-1700 <PAU>
A:Cross-references: GB:X52263; NID:g7057; PID:g7058
C:Genetics:
A:Gene: BR3
A:Map position: 4

Query Match 9.28; Score 181.5; DB 2; Length 1700;
Best Local Similarity 19.9%; Pred. No. 6.8e-06;
Matches 68; Conservative 43; Mismatches 105; Indels 125; Gaps 15;
QY 109 TCCSPRETCVEASELGKSTNFFKPCPVNFR-----CGGCCNEESLCHMTSTSYISK 163
Db 1073 FKCDKQKFIKSEKCECETQT-----QCKDGFWSNLECGCLCDDKK--CP-----GK 1119
QY 164 QLFETSVPLTSVPELVPVKVANH-----TGCKLPTAPRHPYSIIR-----SIQI 209
Db 1120 QVFDKNTCKCKCPNKPQDTCGNGKDFCLDCSKCKNPKPANGCTGVQEWNEKCOCEC 1179
QY 210 PEE-----DRCSHKKL-----CPIDML 227
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[illegible]

Db 36 DWRTLDKSGCKPRDTVYLGPEYESTNLOYNPCVTVARCSCGCGQICQICAVETRN 95  
 QY 161 ISKQFEISVPLTSV-----PELVVKVANHTGCKCL-----PTAPRHP 199  
 Db 96 TT-----VTVSTGVSSSGTNGSVSTNLOYSIVTEHTKDCIGRTTPTTTP 146

## RESULT 13

TVCSTSS  
 platelet-derived growth factor chain B precursor - cat  
 N:Alternate names: PDGF-related transforming protein  
 C:Species: Felis silvestris catus (domestic cat)  
 C:Date: 30-Jun-1989 #sequence\_revision 30-Jun-1989 #text\_change 31-Mar-1996  
 C:Accession: A26402  
 R:Van den Ouweland, A.M.W.; Van Groningen, J.J.M.; Schalken, J.A.; Van Neck, H.W.; Bloem  
 Nucleic Acids Res. 15, 959-970, 1987  
 A:Title: Genetic organization of the c-sis transcription unit.  
 A:Reference number: A26402; MUID:87146463  
 A:Accession: A26402  
 A:Molecule type: mRNA  
 A:Residues: 1-245 <VAN>  
 C:Genetics:  
 A:Gene: sis  
 C:Superfamily: platelet-derived growth factor  
 C:Keywords: glycoprotein; growth factor; platelet; proto-oncogene; transforming protein  
 F:1-20/Domain: signal sequence #status predicted <Sig>  
 F:21-81/Domain: propeptide #status predicted <PRO>  
 F:82-194/Region: platelet-derived growth factor chain B #status predicted <MAT>  
 F:163-167/Region: receptor binding #status predicted  
 F:63/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 8.2%; Score 161; DB 1; Length 245;  
 Best Local Similarity 29.9%; Pred. No. 3.7e-05;  
 Matches 67; Conservative 24; Mismatches 103; Indels 30; Gaps 10;  
 QY 1 MYREVVVVVFMML--YVOLVGSSNEHGPKVRKRSQSTLERSEQOIRAASSLBELLRITH 58  
 Db 1 MNRQWA---LFLSLCCYLRLV---SAEGDPIPEELYKML--SDHSIR---SFDLQRLHL 49  
 QY 59 SEDKWLKRCRLKLSKTS-----MDSRSASHRSTRFAATFYDIETLKVIDEEMQRTQCS 113  
 Db 50 GDSVDEDAELDLNSTRHCGGELESLSRGRSLGEAAGSPTVAEPAMTAE-----CKT 103  
 QY 114 RETCVASELGKSTNTFFK--PCVNVFRGCGCCNEESLICMNTSTSYISKOLFELSVPLTSV 170  
 Db 104 RREVFESRRLLDRTNANFLVMPCEVQRCSCGCGNNRVQCRTQVQLRLVQVRKIEIV 163  
 QY 171 PLTSVPELVVKVANHTGCKCLPTAPRHPYSIIRRSIQIPEEDR 214  
 Db 164 RRRPVFKKATVTLHLACKETVVAARP---VTRSPGSSQQR 204

## RESULT 14

A41236  
 placental growth factor precursor - human  
 C:Species: Homo sapiens (man)  
 C:Date: 19-Jun-1992 #sequence\_revision 19-Jun-1992 #text\_change 05-Nov-1999  
 C:Accession: A41236  
 R:Magillone, D.; Guerriero, V.; Viglietto, G.; Delli-Bovi, P.; Persico, M.G.  
 Proc. Natl. Acad. Sci. U.S.A. 88, 9267-9271, 1991  
 A:Title: Isolation of a human placenta cDNA coding for a protein related to the vascular  
 A:Reference number: A41236; MUID:92021031  
 A:Accession: A41236  
 A:Status: preliminary  
 A:Molecule type: mRNA  
 A:Residues: 1-149 <WAG>  
 A:Cross-references: GB:X54936; NID:g35521; PIDN:CAA38698.1; PID:g35522  
 C:Genetics:  
 A:Gene: GDB:PGF  
 A:Cross-references: GDB:134676; OMIM:601121  
 A:Map\_position: 14q24-14q31

Query Match 8.2%; Score 160.5; DB 2; Length 149;  
 Best Local Similarity 28.3%; Pred. No. 2.5e-05;  
 Matches 39; Conservative 26; Mismatches 56; Indels 17; Gaps 4;  
 QY 63 KLWRCRLKLSFTSMD-----SRSASHRSTRFAATFYDIETLKVIDEEMQRTQCS 115  
 Db 5 RLFFPCFLQLLAGLALPAVPPQWALSAGNSS-----EVEVVP-FQEVWGRSYCRAL 56  
 QY 116 TCVEVASELGKSTNTFFKPCVNVFRGCGCCNEESLICMNTSTSYISKOLFELSVPLTSV 175  
 Db 57 RLVDVSEYSEVEHMFSPSCVLLRCTCGCDENLHCVPVETANTVMOLLKIR--SGDR 114  
 QY 176 PELVPKVANHTGCKCLP 193  
 Db 115 PSYVELTFSQHVRCECRP 132

## RESULT 15

A56125  
 placental growth factor precursor - rat  
 C:Species: Rattus norvegicus (Norway rat)  
 C:Date: 19-Oct-1995 #sequence\_revision 19-Oct-1995 #text\_change 05-Nov-1999  
 C:Accession: A56125  
 R:DiSalvo, J.; Bayne, M.L.; Conn, G.; Kwok, P.W.; Trivedi, P.G.; Soderman, D.D.; Pall  
 J. Biol. Chem. 270, 7717-7723, 1995  
 A:Title: Purification and characterization of a naturally occurring vascular endothel  
 A:Reference number: A56125; MUID:95221439  
 A:Accession: A56125  
 A:Status: preliminary; not compared with conceptual translation  
 A:Molecule type: mRNA  
 A:Residues: 1-158 <DIS>  
 A:Cross-references: GB:I40030; NID:gl263413; PIDN:AAA97426.1; PID:gl263414  
 C:Keywords: glycoprotein

Query Match 8.0%; Score 158; DB 2; Length 158;  
 Best Local Similarity 29.9%; Pred. No. 4.1e-05;  
 Matches 40; Conservative 25; Mismatches 57; Indels 12; Gaps 4;  
 QY 63 KLWRCRLKLSFTSMDSR---SASHRSTRFAATFYDIETLKVIDEEMQRTQCS 119  
 Db 5 KLFTCFLOVLAVHSQALSGAGNSNT-----EMEVVP-FNEVWGRSYCRPMKLVY 56  
 QY 120 VASELGKSTNTFFKPCVNVFRGCGCCNEESLICMNTSTSYISKOLFELSVPLTSVPELV 179  
 Db 57 IADEHPNEVSHIFSPSCVLLSRCSGCGDEGLHCVALKANTITMQLKIP-PNRDPHSYV 115  
 QY 180 PVKVANHTGCKCLP 193  
 Db 116 EMTFSQDVLCECRP 129

Search completed: May 16, 2000, 16:39:03  
 Job time: 7426 sec